

THE
CALCUTTA JOURNAL
OF
MEDICINE:

A MONTHLY RECORD OF THE MEDICAL AND AUXILIARY SCIENCES.

That alone is the right medicine which can remove disease :
He alone is the true physician who can restore health.

Charaka Sanhitā.

EDITED BY
MAHENDRA LA'L SIRCA'R, M.D., C.I.E.

VOL. VIII.

Calcutta:

PRINTED AND PUBLISHED BY T. D. DEY, ANGLO-SANSKRIT PRESS,
51, SANKARITOLA LANE.
LONDON : THE HOMOEOPATHIC PUBLISHING COMPANY, 2, FINSBURY CIRCUS, E. C.
(Sole Agents for the United Kingdom.)
NEW YORK : BERICKE AND TAFEL, 145, GRAND ST.
(Sole Agents for America.)

July 1876.

Annual Subscription Rs. 10 (£ 1) in advance ; Rs. 12 in arrears.



Shreeganga S. Public Library
Acq. No. 12155. Date... 29.12.76.



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VOL. VIII.] **July 1876.** [NO. 1.

OURSELVES.

The triple number for Oct.-Dec. 1874 appeared in September 1875, and since then we have not been able to issue a single number. We are thus a year and a half in arrears, and we do not see our way clear as to how to bring them up. We have neither time nor health to enable us to accomplish the task. So that being unable to untie, we have no other alternative than to cut, the gordian knot; in other words, we must ignore the time which has gone into the limbo of the irretrievable Past.

The most inconvenient and the most unpleasant thing in Journalism is to drag on arrears, inconvenient, to the Journalist and unpleasant to his readers. The value of a Journal consists as much in its matter as in the regularity of its periodical appearance. Whether actually a law immutable and eternal or not, this much is certain that, not satisfied with simply impressing upon her objects grandeur and beauty, Nature has taken particular care that there shall be an additional charm in their appearance in their ceaseless flow in time, and that charm is the charm of periodicity. Man approximates to the perfection of nature most, when he succeeds in imitating her most; and of all his imitations of nature the most successful are the inventions of the clock and of

periodical literature. Both serve to indicate the progress he makes, and both warn him of the relentless nature of time. But both become worthless and fail to fulfil their functions, when they cease to be regular. Thus impressed we have once again made an effort to bring our Journal up to the normal condition of all periodical publications, punctuality of appearance.

But whether we shall be able to maintain this normal condition, whether we shall be able to present our Paper month after month with regularity is, we must confess, more than we can promise. We *could* promise the regular appearance of the Journal, if we were sure of one condition, and that is the co-operation of our brethren of the Native branch of the Profession. The Journal would not have fallen into the hopeless state of arrears from which we have endeavoured to retrieve it by the indulgence of our readers, had we been favored with but an infinitesimal fraction of the aid we had expected from the graduates of the Medical College scattered throughout India.

As we said in the Prospectus, and in our confession of faith in our opening article, our object was not the special and blind advocacy of this or that system of medicine, but the record and utilization, the collection and co-ordination, of all available facts in Medicine. And thus we left ample room for any one and every one competent to observe, who had facts to relate and record, to come forward in aid of the Journal. In fact, we started the Journal to supply a want that we then felt, and which we still feel, having not yet been supplied in any part of the world, the want of a paper that should welcome, and not reject, facts of cure by known and knowable methods and agents, provided they are reported by competent authorities.

We yet hope our native brethren will awake to the responsibility of their position as members of a most sacred profession. We hope they will shake off their apathy, or as I understand it, their diffidence, and, acting on the maxim "better late than never," endeavour to discharge their debt to the Profession as Bacon calls it, which rightly interpreted means their debt to humanity. They ought to remember that the omission to record one single correct observation of anything connected with disease or its treatment is so much loss to the patient-world. They must bear in mind that their duty does not end when they have done with their own patients. This is the feeling of the quack, but they must rise above that selfish and sordid feeling.

EXPERIMENTS ON SNAKE POISON.

Third Series.

Expt. 1.

25th September 1874.

A Cock was bitten severely on the external aspect of the right leg, by a *Gokhura*, at 2-41½ p. m.

2-42 p. m. Made to inhale pure oxygen, or rather the Head was put into an apparatus into which oxygen was issuing from a gas-holder.

2-43. The head was taken out of the apparatus; the eyes were closed and no movement observed.

2-45. Apparently dead. The head was put again within the apparatus.

2-46. The respiratory movements seemed to revive.

2-47. Flapped its wings thrice.

2-52. No respiratory movements; eyes closed but on opening them, the pupils were found not dilated.

2-55. No sign of respiration.

2-57. Apparently dead: pupils not yet dilated. Had passed feces and probably urine while living.

Post mortem examination 19 minutes after death. The two wounds of the fangs were observed about ½ inch apart, penetrating deep into the muscles of the thigh. The bitten part, to a considerable depth, was dark-colored almost blackish. The whole limb, in fact, was darker than the other corresponding limb. The blood was fluid every where, and did not coagulate. The blood from the liver only slightly and imperfectly coagulated. The blood was not only fluid every where but was not so dark as in other experiments.

Was the fluidity of the blood due to the action of the oxygen? The bird was apparently dead in three (3) minutes, but respired again and lived at least 5 minutes longer. Was not this owing to the action of oxygen?

There was another thing in this experiment which was very unusual—namely, that there were no convulsions which were very frequent, in *Cobra* bites, in birds, in former experiments. This might have been due to the energetic action of the poison itself, which in this case was very great, as the bird almost dropped down dead after the bite; but it might have been due to the action of the oxygen likewise.

Expt. 2.

A cat bitten on the left leg, by a *Gokhura*, at 4-17 p. m. Sept. 1874, limps, uttering groans.

4-18 p. m. Restless and crying about with the left or bitten leg drawn up.

4-20. Inhalation of oxygen begun.

4-23½. Apparently unable to get up.

4-25. The animal apparently becomes more active when made to inhale oxygen.

• 4-28 p. m. Attempts to walk but cannot do so.

4-31. Voice hoarser; licked its tail after looking at a person intently, uttering subdued cries—indication of humble; laid himself down and got up again; respiration, which was more frequent (96) before, is now becoming slow.

4-33. Attempts to vomit incessantly, bringing up nothing but a small quantity of water.

4-34. Convulsions.

4-35. Made to inhale oxygen; convulsions again.

4-36. Gasping; pupils widely dilated; the hairs of the tail erect; did not pass any urine or stool.

4-37. Dead. Eyes continuing brilliant and glassy; jaws slightly opened; some frothy saliva coming out of the mouth.

Post mortem examination, 1 hour 9 minutes after death, revealed a serous infiltration, just underneath the bitten part, as well as to some distance around, giving the parts a glistening appearance. The muscular tissues around the bite wore a dark congested appearance. The veins of the part were found to be gorged with fluid blood which did not even coagulate on exposure. The bitten muscle was very dark. On opening the abdomen, the liver, the spleen, the kidneys and the intestines were found healthy. Peristaltic movements were going on in the intestines, showing that vegetative life was not yet extinct. On opening the thorax, the heart, with all its great blood-vessels, was found distended with blood of a dark color. The lungs were deeply congested, some portions being more so than the others. No general movements of the heart were observed but the right auricle was found slightly to pulsate twice. It pulsed once again for 4 or 5 times. The left-ventricle contained very dark pretty firm clots. The right ventricle contained dark fluid and clotty blood. Both the auricles were distended with coagulated and fluid blood. The cervical vessels, the abdominal aorta and the thoracic aorta were distended with coagulated and fluid blood. The fluid portion of the blood coagulated on exposure. Cerebrum normal in appearance.

Expt. 3.

Another cat was bitten, by a *Gokhura*, on the left leg at 4-29 p. m.

4-30 p. m. Walking with the bitten leg drawn up.

4-48. Sitting quietly; voice not hoarse; does not appear to be distressed when made to walk; does so with the bitten leg drawn up.

5-17. Walks when made to do so with the bitten leg drawn up, but lays herself down immediately if not disturbed; voice hoarser; is evidently affected by the poison.

5-22. Is quite active still; attempts to run away when frightened.

5-25. Unable to support the head.

5-28. Still runs about when frightened but lays herself again; seems to be more affected; slight convulsive movements of the head; is not unconscious.

5-40. The bitten leg is thrown into spasms during convulsions; getting general convulsions; pupils getting dilated; respiration

abdominal; mucous membrane of the mouth pale; no froth at the mouth; no lock-jaw; the tongue seemed adherent to the palate but is easily detached; dead, with pupils widely dilated; eyes glistening.

A post mortem examination was held immediately after death. Two punctures were visible about half an inch apart. On cutting open the bitten leg at the punctures, the part was found infiltrated with serum and was glairy as far as the knee joint. The exudation was more of a lymphic character than serous, being rather coagulated than fluid. The muscle bitten into presented the same coagulated appearance as in the first case. Peristaltic movements were observed in the intestines. Pulsations were observed in the auricles specially on touching and pricking the heart, the chambers of which contained fluid blood, which coagulated on exposure.

Expt. 1.

15th November 1874, A Cock, bitten on the front part of the right thigh, by a snake called, *Sāṅkhāmūtī*, at 4-11 P. M. made no noise during the biting. There was no sign of his being affected in the least till 4-50 P. M. when he passed a yellow stool and seemed drowsy, his head drooping.

4-53 P. M. Stands erect, passes a stool and then sits down, his head drooping.

4-51. Raised his head but cannot keep it erect, seems to be conscious of all noises and stands up, being poked.

4-55. Passes a stool again, sits down immediately, stooping his head.

4-57. Seemed as though poisoned by a narcotic, resting his head on the ground.

4-59. Raised his head; 5 P. M. lets it fall to the ground.

5-1. Passed a stool while sitting with his head on the ground.

5-2. Stands up on being poked and sits down immediately with his head on the ground.

5-4. Does not stand, though poked—passes a stool.

5-5. Lays himself on the ground, supporting his head on the beak. Is conscious of all sounds.

5-25. Reflex sensibility almost nil; by strongly pinching his comb, he raised his head but it immediately drooped down.

5-27. A feather was plucked without producing any pain.

5-28. Gasping.

5-31. Being poked raises his head.

5-34. Seems that it can be more easily roused.

5-35. Shook his head 5 times.

5-38. Cannot keep his head supported on his beak, but it falls on either side.

5-39. Watery saliva dropping out of the mouth.

5-41. Convulsive twitchings of the head continues. Temperature normal.

5-45. One slight general convulsion of the whole body, changing the inclination of the head from the left to the right side. On being made to lie on his back, he would not do so, although he

could not resume his former posture. Passed a watery stool without any feculent matter.

5-48 P. M. Reflex sensibility not quite gone. One slight general convulsive movement again.

5-50. Three general convulsions in a minute, in the last of those the wings flapped. Respiration 12.

5-58. The head and the eyelids moving; eyes quite red and watery; pupils not dilated. Passed a perfectly watery copious stool.

6. Reflex sensibility seems to have increased; on touching the eyelids, the head and body move. One slight general convulsion by touching the comb.

6-3. Gasping.

6-5. One violent convulsion of the whole body.

6-7. Convulsive movements of the tail.

6-9. A violent general convulsion with flapping of the wings. The convulsive twitchings of the head continue.

6-11. One violent convulsion again, with flapping of the wings.

6-15. Temp. normal. Respiration 10. Again a violent convulsion with flapping of the wings, more so of the tail, so that he turns from the right to the left side.

6-20. Two convulsions of the head.

6-25. Gasping.

6-27. Temperature much less. Respiration 10.

6-32. Digits cold.

6-33. Moves the head, the comb being pricked. One violent convulsion of the whole body and another of the tail only.

6-35. Two slight convulsions followed by another of the same nature. Convulsive twitchings of the head continue.

6-38. A slight convulsion of the posterior part of the body.

6-43. A violent convulsion in which the body passed forward, followed by another of the same nature.

6-45. A violent convulsion followed by that of the tail only.

6-49. Feathers of the neck and slightly of the back stand erect. A slight convulsion of the whole body followed by 2 violent ones of the wings. The body becoming cold.

6-52. Being placed on the back he retains the same posture. The digits are extended. The anus is opening and closing spasmodically.

6-55. Pupils more dilated. No sign of respiration nor of reflex sensibility.

6-57. Seems to be dead, with the eyes and mouth closed.

On cutting open the thorax and the abdomen, 5 minutes after death, the blood, which flowed out, was dark and thick and immediately coagulated. The heart was found not beating. The bitten leg being cut through, a serous fluid was found between the cuticular and muscular tissues, and also (though less in quantity) in the inter-muscular tissues, giving the parts a moist and glistening appearance. The cellular tissue between the skin and the muscle was dropsical, probably containing the same fluid. Only one puncture, slightly dark,

was seen. The dropsical appearance ceased, the higher the limb was incised. On incising through the other limb, the tissues were found dry. The bitten limb was slightly swollen but not congested as in *Cobra* bites. It was only the part punctured that was slightly congested giving it the darkish appearance mentioned above. The vessels of the piamater seem to be somewhat congested.

Expt. 5.

Sunday the 20th December 1875.

3 P. M. A vigorous Daboin was made to bite the right hind leg of a full grown cat, which was diseased, having extensive patches of psoriasis all over the surface, in consequence of which he was nearly hairless.

3-3. Passed stool, solid and yellowish.

3-4. Eyeballs tremulous. Daboin 6th dil. administered by the mouth.

3-5. The anterior extremities are being convulsed. The head bent backwards.

6-6 $\frac{1}{2}$. Respiration frequent. Stool again, of the same character.

3-7 $\frac{1}{2}$. 5 drops of the 6th dil. of Daboin again given, but there was no sign of swallowing. The dropping of the medicine was followed by the immediate opening of the mouth, probably from the irritation of the alcohol with which the poison was attenuated.

3-9 $\frac{1}{2}$. Respiration 60 in a minute. Pupils contracted to mere slits.

3-10. Opened its mouth again, and closed it again gradually.

3-10 $\frac{1}{2}$. The head is not so much bent backwards as before.

3-11. Occasional gasps; opens mouth and gasps.

3-12. Takes a deep breath. Expiration rapid.

3-13. Pupils continue contracted, almost closed.

3-13 $\frac{1}{2}$. Respiration 126 in a minute. The eyes are watery.

3-15. 5 drops of the medicine again put into the mouth, undiluted.

3-15 $\frac{1}{2}$. Slight convulsions of the anterior extremities.

3-16. Convulsions again, and occasional gasps.

3-16 $\frac{1}{2}$. Pupils continue contracted just as before. Body warm.

3-17 $\frac{1}{2}$. Opens its mouth again.

3-18. The head convulsed.

3-19. The respiration 84. Becomes frequent immediately after the gaspings.

3-20. Reflex action in the ears intact.

3-21. Sensibility of the eyeballs perfect, but evidently does not see. Touching them occasions closure of the eyelids.

3-22. Convulsed, again and again. The eyelids are still sensitive to touch.

3-23. The head, and the anterior extremities are being convulsed.

3-23 $\frac{1}{2}$. 5 drops undiluted again dropped into the throat.

3-24. Convulsions. Reflex sensibility of the ears and eyes continues.

3-26. The tail and the extremities do not respond to touch or any sort of irritation.

3-28 p. m. Respiration 78.

3-30. Reflex sensibility of the eyelids somewhat less; pupils slightly opened. Sensibility of the eyeball continues. Convulsions of the anterior and posterior extremities.

3-30½. Body still warm. Convulsions of the extremities.

3-31½. Pupils opening out.

3-32. Reflex sensibility of the ears same as before.

3-32½. The whole body convulsed, the head being bent backwards.

3-33. Violent convulsions, especially of the extremities. Pupils more dilated.

3-35. Respiration 76. Occasional gasps as before, no manifestation of sensibility of any part except the tail and the nostrils. Closes its eyes evidently voluntarily, raised its head, but it dropped.

3-37½. Convulsions.

3-38. The bitten leg moves less during the convulsions.

3-39½. 5 drops undiluted again dropped into the throat. Blood oozing from the right nostril on being very slightly pricked.

3-41. The head and the right anterior extremities flexed with slight convulsive movement.

3-42. The whole body convulsed. Pupils more dilated. The eyeballs moving laterally. Closed the eyelids.

3-43. Respiration 78. The whole body convulsed.

3-45. Raised its anterior extremities, and moved them as if pawing. Cheeks puffing during respiration.

3-47. Closed the eyelids again. Pupils more dilated. Closing eyelids more frequently. Convulsed, the head being bent backwards opisthotonically.

3-47½. Those violent convulsions. Pupils dilated nearly into a circle. Convulsed, the head being thrown backwards. Respiration 80.

3-48½. Convulsed, especially the extremities and the head.

3-51. Body warm as before.

3-51½. Closing eyelids. Convulsed, the head and the anterior extremities, and slightly the posterior extremities.

3-52-56. No more puffing of the cheeks. Convulsions.

3-56. Closing the eyelids. Respiration 32.

3-57. Pupils more dilated.

3-58. Convulsions of the posterior extremities and of the head. Slight convulsive movements of the ears as in the natural state under irritation. Constantly closing the eyelids.

3-59. Posterior extremities stretched backwards as before. Respiration 24.

p. m. Convulsions. Groans.

1½. Reflex sensibility of the eyelids and eyeballs continues. Pupils more widely dilated.

1-2. Convulsions. Sensibility of the ear less.

1-2½. Groans. Respiration 12.

1-3. Groans. Body warm as before.

4-3½. Groaning as in agony. No sign of respiration. The mouth opens, on the abdomen being pressed. Drawing down of the lower jaw as in spasmodic expiration. Opens the mouth spasmodically.

4-5½. Spasmodic respiration, with slight sound proceeding from the throat as in groans.

4-13. The same sort of spasmodic movements continue but at longer intervals.

4-14. Pupils more widely dilated. No sensibility of the eyeballs. The corneæ wrinkle on pressure, and the wrinkles continue even after removal of the pressure.

4-15. Dead.

Post mortem Examination, 10 P. M., 21st December 1874.

On the inner aspect of the right hind, the bitten, leg, two punctures were seen on the skin about an inch apart. They presented the appearance of ecchymosed spots. They had penetrated the muscular structure down to the bone. The adjacent vein was also seen to have been penetrated by another puncture. The veins were gorged with dark blood. On the inner aspect there was no glistening appearance. On the outer aspect there was glistening appearance, but the effusion which had given rise to it was slight. One of the two punctures that had penetrated the muscles was very deep, and the whole depth of the muscle that was penetrated presented a very dark congested appearance, almost blackish, the layers of the muscle presented a glistening appearance, but the effusion was slight.

Abdomen swollen and tympanitic. On dividing the skin and separating it from the fascia beneath there was no sign of effusion seen, on the contrary the whole appearance was dry. On incising the abdominal wall at the posterior part, a quantity of sanguinolent fluid escaped from the peritoneal cavity. The Peritoneal cavity contained similar fluid in other parts.

The *Veins* of the bitten limb were gorged with darkish, rather thick, but uncoagulated blood. The right femoral vein was full of such blood. The veins of the other hind limb were *not* gorged with blood, on the contrary they were rather empty, but the contained blood was of the same character.

The veins of the kidneys were gorged with similar blood. The left kidney was of somewhat larger size than the right.

The *spleen* and the *liver* presented their usual appearance.

No fluid in the *pleural cavities*. Both the *lungs* congested in patches almost throughout. The lungs somewhat collapsed, but not much. They were crepitant on pressure. The *pericardium* contained a large quantity (about 3ii) of sanguinolent fluid as in the peritoneum.

Heart distended. The right auricle contained a large quantity of rather thin, fluid blood, thinner than was found in the femoral vein. The right ventricle and the venæ cavæ contained blood of the same character. Left ventricle contained ecchymotic patches beneath the endocardium, about the mitral valves. The blood in the cardiac cavities, as well as in the cavæ was not very dark as in *cobra-poisoning*.

Stomach contained half digested food, chiefly rice, and a large number of lumbrici from 2 to 4 inches in length.

Bladder contained a slight quantity of albuminous looking fluid.

Brain examined at 5 p. m. Dura mater congested. Arachnoid cavity contained some sanguineous fluid. Vessels of the pia mater congested, both of the cerebrum and of the cerebellum. The ventricles did not contain any fluid. Brain substance of natural hardness, and had the usual normal appearance without any trace of congestion.

The *Blood* under the microscope did not present the usual arrangement of the globules into rouleaux.

Expt. 6.

Thursday, the 24th December 1874.

5-10 p. m. A full grown cock was bitten, by a *Daboia*, in the left thigh; made a crowing noise.

5-12. Passed a natural stool.

5-22. A smaller *Daboia* was made to bite the same left leg, it did not bite at first but did so three times after being irritated. After each bite the bird uttered screams and flapped his wings.

5-26. On being let go, the bird flew up the stairs, and on the sixth step he began to convulse; the convulsive movements brought it down the stairs when he died after 2 or 3 convulsions.

Two drops of *Daboia* 6 were given after the bird was dead.

5-32. The body continues warm; the eyelids closed, and the pupils dilated.

Post mortem examination, 21 hours after death, showed that the vessels of the pia mater covering the cerebrum were congested, that covering the medulla oblongata much more so. The veins of the spinal cord, the substance of the brain, and the choroid plexus, deeply congested. On cutting through the muscles of the breast, the veins were found deeply congested and filled with dark coagulated blood. The vessels of the lungs filled with dark coagulated blood. The liver very much congested, the vessels filled with partly fluid partly coagulated blood. The gall-bladder distended with bile. The coats of the stomach deeply congested, the vessels filled with coagulated blood; and so are all the abdominal viscera. All the chambers of the heart filled with dark coagulated blood.

On cutting through the bitten part, three punctures were discovered at each of which beneath the skin there was found coagulated blood. The muscular structure bitten through, was deeply congested and presented a glistening appearance.

NECESSITY FOR A HOMŒOPATHIC HOSPITAL. AND DISPENSARY IN CALCUTTA.

The following tables, compiled from the case-books and registers of the above Dispensary, speak for themselves. They clearly show the confidence which Homœopathy, as a system of medical treatment, is gaining among the community.

1874.

NEW CASES.

MONTH.	HINDU.				MAHOMEDAN.				CHRISTIAN, &c.				GRAND TOTAL.
	Adults.		Children.		Adults.		Children.		Adults.		Children.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
January	362	78	88	40	100	22	20	12	6	10	1	2	741
Febr.	294	66	77	38	100	24	12	10	5	3	6	0	635
March ...	384	123	99	56	114	27	24	18	6	7	4	4	866
April	268	81	89	46	103	31	30	24	4	4	7	2	689
May	286	72	95	50	92	24	40	15	7	1	4	3	689
June.....	261	72	80	48	74	31	25	18	5	9	6	1	630
July	184	43	75	44	90	25	35	26	3	5	2	4	536
August ...	228	74	74	31	133	38	45	27	8	7	1	0	666
Sept.	248	87	84	36	123	30	41	21	9	6	1	4	690
Oct.	250	74	104	31	130	34	23	30	8	11	2	3	700
Nov.	348	91	90	57	120	42	37	21	11	7	5	1	830
Dec.	306	81	63	39	158	44	60	24	15	9	2	6	807
TOTAL....	3419	942	1018	516	1337	372	392	246	67	79	41	30	8479

OLD CASES.

MONTH.	HINDU.				MAHOMEDAN.				CHRISTIAN, &c.				GRAND TOTAL.
	Adults		Children.		Adults.		Children.		Adults.		Children.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
January	1366	452	232	133	223	66	34	21	50	71	9	16	2673
Febr. ...	1223	331	249	135	239	53	43	22	20	58	18	10	2401
March ..	1458	501	356	149	358	98	40	20	40	74	15	20	3129
April ...	1271	459	288	138	371	69	50	25	41	46	6	10	2774
May	1155	357	268	141	309	92	53	26	16	40	14	11	2492
June	1020	314	233	103	327	90	33	19	33	47	19	4	2242
July	797	262	180	88	277	82	74	26	34	23	15	11	1869
August	692	238	137	88	325	101	76	30	44	24	11	15	1781
Sept. ...	772	294	182	99	340	90	64	39	36	25	5	8	1954
Oct.	692	293	197	81	289	110	83	38	64	40	12	26	1925
Nov.	935	297	261	114	281	106	96	37	51	36	3	20	2237
Dec.	889	364	259	105	320	176	134	30	64	49	18	22	2430
TOTAL....	12270	4162	2842	1374	3659	1133	780	343	493	533	145	173	27907

		HINDU.			MAHOMEDAN.			CHRISTIAN.		
		New.	Old.	Total.	New.	Old.	Total.	New	Old.	Total.
M.	A.	3419	12270	15689	1337	3659	4996	87	493	580
F.	A.	942	4162	5104	372	1133	1505	79	533	612
M.	C.	1018	2812	3860	392	780	1172	41	145	186
F.	C.	516	1374	1890	246	343	589	30	173	203
Total.		5695	20648	26543	2347	5915	8262	237	1314	1581

DAILY AVERAGE.

Hindus.

	New	Old	Total
Male Adults	9.36	33.61	42.98
Female Adults	2.58	11.40	13.98
Male Children	2.79	7.78	10.58
Female Children	1.41	3.76	5.17
Total	16.15	56.56	72.72

Mahomedans.

	New	Old	Total
Male Adults	3.66	10.02	13.69
Female Adults	1.02	3.10	4.12
Male Children	1.07	2.13	3.21
Female Children	0.67	0.94	1.61
Total	6.43	16.20	22.69

Christians

	New	Old	Total
Male Adults	0.24	1.35	1.60
Female Adults	0.21	1.46	1.67
Male Children	0.11	0.39	0.51
Female Children	0.08	0.47	0.55
Total	0.64	3.69	4.33

Number of	New Patients	...	8479
"	Old	"	27907
"	All	"	36386
Daily average	New	"	23.23
"	Old	"	76.45
"	All	"	99.68

	New	Old	Total
January	741	2673	3414
February	635	2401	3036
March	866	3129	3995
April	689	2774	3462
May	689	2492	3181
June	630	2242	2872
July	536	1869	2405
August	666	1781	2447
September	690	1954	2644
October	700	1925	2625
November	830	2237	3067
December	807	2430	3237

1875.

NEW CASES.

MONTH.	HINDU.				MAHOMEDAN.				CHRISTIAN, &c.				GRAND TOTAL.
	Adults.		Children.		Adults.		Children.		Adults.		Children.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
January	234	75	64	31	109	25	27	15	6	15	8	5	614
Febr.	238	57	80	25	87	32	24	10	5	4	6	3	571
March	305	94	93	38	101	28	49	34	7	10	4	8	771
April	259	91	103	52	108	40	37	18	10	13	9	5	745
May	317	80	91	68	102	51	44	27	12	6	3	8	809
June	312	101	120	63	102	41	23	20	14	9	2	3	813
July	340	104	119	62	117	37	41	23	15	9	1	3	871
August ...	428	143	172	82	196	83	112	64	8	3	3	3	1297
Sept.	387	117	129	73	187	70	73	44	6	8	7	3	1104
Oct.	408	128	122	64	153	62	51	33	11	8	8	11	1059
Nov.	367	131	103	73	184	50	56	23	7	11	13	3	1021
Dec.	325	92	116	55	114	35	54	25	7	9	4	5	841
	3920	1213	1312	686	1560	557	591	336	108	105	68	60	10516

OLD CASES.

MONTH.	HINDU.				MAHOMEDAN.				CHRISTIAN, &c.				GRAND
	Adults.		Children.		Adults.		Children.		Adults.		Children.		TOTAL.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
January	876	334	213	78	321	166	84	29	35	43	8	38	2225
Febr.	880	221	208	56	188	95	54	10	31	43	5	10	1801
March ...	1028	279	190	74	239	126	61	33	52	68	4	11	2165
April	899	303	213	110	215	113	85	25	33	51	10	11	2068
May	980	301	221	154	251	220	83	33	68	39	17	40	2407
June	1085	273	248	218	304	177	40	28	66	39	28	13	2519
July	1142	326	377	218	339	162	63	55	85	42	23	8	2840
August ..	1218	407	417	199	430	246	181	81	76	62	12	2	3331
Sept.	1212	397	351	171	415	251	143	43	73	47	10	0	3143
Oct.	1025	398	288	130	344	202	80	53	51	49	12	19	2651
Nov.	1212	473	288	154	395	171	78	50	65	02	19	8	2978
Dec.	1189	424	322	148	330	142	73	47	42	43	11	10	2781
TOTAL ...	12776	4136	3336	1710	3771	2074	1025	487	677	588	159	170	30909

		HINDU.			MAHOMEDAN.			CHRISTIAN.		
		New.	Old.	Total.	New.	Old.	Total.	New.	Old.	Total.
M.	A.	3920	12776	16696	1560	3771	5331	108	677	785
F.	A.	1213	4136	5349	557	2074	2631	105	588	693
M.	C.	1312	3336	4648	591	1025	1616	68	159	227
F.	C.	686	1710	2396	336	487	823	60	170	230
Total.		7131	21958	29089	3044	7357	10401	341	1594	1935

DAILY AVERAGE :

Hindus.

	New	Old	Total.
Male Adults	10.74	35.00	45.74
Female Adults	3.32	11.33	14.65
Male Children	3.59	9.14	12.73
Female Children	1.87	4.68	6.55
Total.	19.53	60.16	79.69

Mahomedans.

	New	Old	Total.
Male Adults	4.27	10.33	14.61
Female Adults	1.52	5.68	7.21
Male Children	1.62	2.80	4.42
Female Children	0.92	1.33	2.25
Total	8.34	20.15	28.49

Christians.

	New	Old	Total.
Male Adults	0.29	1.85	2.15
Female Adults	0.29	1.60	1.90
Male Children	0.18	0.43	0.62
Female Children	0.16	0.46	0.62
Total	0.93	4.36	5.30

Number of	New Patients	10516
" "	Old "	30909
" "	All "	41425
Daily average	New "	28.80
" "	Old "	84.68
" "	All "	113.49

	New	Old	Total.
January	614	2225	2839
February	571	1801	2372
March	771	2165	2936
April	745	2068	2815
May	809	2407	3216
June	813	2519	3332
July	871	2840	3711
August	1297	3331	4628
September	1104	3143	4247
October	1050	2651	3710
November	1021	2078	3099
December	841	2781	3622

July 1876.] *and Dispensary in Calcutta.*

610.5
CALIM
VOL. 8
1876¹⁵

Starting from 1869 since when homœopathic treatment was exclusively followed in treating patients coming to me for advice.

The daily average of cases treated were—

New	Old	All	for	
4.9	...	...	for	1869
5.8	...	...	"	1870
11.4	...	...	"	1871
16.9	62.34	78.24	"	1872
23.7	76.14	99.94	"	1873
23.23	76.45	99.68	"	1874
28.80	84.68	113.49	"	1875

The rapid rise in the number of patients from year to year resorting to homœopathic treatment is remarkable. The stationary character of 1874 was due to the Editor's inability to attend the Dispensary, thanks to his frequent and serious illness in that year.

We are certain that if we had a steady organization—a paid establishment, and if we had time and health to enable us to devote due attention to the existing demand for homœopathic treatment, that demand would have been indicated by much larger figures than are shown in the above tables. It is not only from the city and the suburbs but in no small numbers from the remote mofussil, that patients come to us for treatment. And when we say that at least three fourths of this number are benefited by such treatment, we are within and not outside the limits of fact. Such being the case, it is the duty of the community to see that the benefits of the system are extended as much as possible.

The work of the Dispensary has been, it is true, to a large extent, a labor of love to us, but it has not the less been imposed upon us by a sense of duty—duty to a life-giving truth, and duty to suffering humanity. And therefore not only willingly but cheerfully we have hitherto been doing that work. But we feel it a duty as well to tell the public that the burden we have been bearing upon our shoulders is in reality the burden of the many. What we said in reference to this matter when we first published the statistics of our Dispensary, we say again, that "however steadily the work might have been done in the past, nevertheless when it has to depend upon one individual, it has to a large extent to depend upon haphazard and chance, and such work should not be allowed to depend upon chance and haphazard." The inevitable, though thanks to the available gratuitous services of the Editor's revered uncle, Babu Mahesa Chandra Ghosha, only partial neglect into which the Dispensary fell in 1874, verified to the very letter the misgivings to which we gave utterance in the above sentence. Time therefore has arrived when the community and the Government should no

longer remain indifferent to the claims of homœopathy for the foundation and support of an Institution dedicated to the extension of its benefits to the suffering poor.

There is hardly a part of the civilized world where homœopathy has not met with public recognition in the shape of public institutions either for teaching its doctrines or for diffusing the blessings of its treatment. In the United States of America, it has been received with all the enthusiasm of a youthful world, and there are Colleges and Hospitals there in abundance. In Europe there are also Hospitals and Dispensaries, and even chairs are being introduced in the very heart of the orthodox institutions. In Central and even in South America homœopathy has planted its banners. The other day we learned it to our surprise and joy that in the little Republic of Uruguay there is an Insane Asylum in charge of a homœopathic physician. Is it not a melancholy fact that in Calcutta, where we have so many staunch advocates of homœopathy, and where so many are receiving the benefits of that benign system of treatment, there should not yet be a single institution where those benefits may be publicly availed of by the poor?

Acknowledgment.

We have to acknowledge with thanks the following publications which we shall take an early opportunity to review :—

The Diseases of Women homœopathically Treated. By Thomas R. Leadam. 2nd Edition. E. Gould & Son. London. 1874.

Headaches, their Causes and Treatment. By E. B. Shulldham, M. D., &c. Gould and Son. London. 1875.

A Manual of Pharmaco-dynamics. By Richard Hughes, L. B. C. P. 3rd Edition. Mainly Re-written. H. Turner & Co. London. 1876.

Therapeutics of Tuberculosis or Pulmonary Consumption. By W. H. Burt, M. D. of Chicago, Illinois. Boericke and Tafel. New York and Philadelphia. 1876.

A Scientific Principle for Toxicology. The Limits of Antiprury. Explanatory Hypotheses. By William Sharp, M. D. F. R. S., &c. Henry Turner & Co. London. 1876.

Homœopathy and Gynæcology. By Thomas Skinner, M. D. Adam Holden. Liverpool. 1876.

On Nasal Catarrh: Its Symptoms, Causes, Complications, Prevention, Treatment, etc., with Illustrative Cases. By Lucius D. Morse, M. D. A. F. Dod & Co. Memphis. 1876.

On Certain Endemic Skin and other Diseases of India and Hot Climates generally. By Tilbury Fox, M. D., &c. and T. Farquhar, M. D., &c. (Published under the sanction of the Secretary of State for India.)

चरकसंहिता ।

चतुर्विधानम् ।

चतुर्थोऽध्यायः ।

जीवकर्षभकौ काकोली जीरकाकोली मुद्गपर्णीमाषपर्णी
मेदा दचवरे। जटिला कुलीर-वृक्षी इति दशेभ्योऽपि शुक्रजननानि
भवन्ति ॥ ४३ ॥

कुष्ठैलवालुककट्फलासुप्तेषु फेफकदम्बनिर्व्यासेक्षुकाण्डेस्त्रिपुर-
कण्डकोशीराणि इति दशेभ्योऽपि शुक्रशोधनानि भवन्ति ॥ ४४ ॥
इति चतुष्कः कषायवर्गः ।

CHARAKA SANHITA.

CHAP. 4. SHARVIRECHANA SĀTĀ'SRITYA.

43. Jīvaka, rishabhaka, kākoli, kshīrakākoli, mudgaparṇī, māsaparṇī, medā, vriksharuhā* (वाञ्छरा, cymbidium tessaloides), jatilā (जटिला, valerianajata-mausi), kulīrasring† (कुलीर-वृक्षी),—these ten are śukrajanana.

44. Kuṣṭha, alavāluka,‡ katphala, samudraphena, kadamba-niryāsa (कदम्ब-जटिला), ikshu,§ kāṇḍekshu (नटो or कण्डो), ikshuraka (इक्षु-कण्डो), vasuka (वसुका), and us'ra,—these ten are śukraśodhana.

These are four varieties of extracts.

* वृक्षरुहंतिपाठे घतमूली ।

† कुलीरवृक्ष इति पाठे जटिलान्वी

‡ तावद्वत्तिपाठः । इक्षुस्थाने तावः प्रयुक्तः ।

§ A granular substance apparently vegetable, of a reddish brown colour, and used as a drug and as a perfume.—Wilson.

“ चङ्गीकामधुकामधुपर्णीमहामेदाविदारिकाकोलीक्षीरकाकोली-
जीवकीवन्तीशालपर्ण्य इति दशेमानि स्नेहोपयोगानि भवन्ति
॥ ४५ ॥

शोभाञ्जनकैरण्याकटक्षीरपुनर्नवायवतिलकुलत्वमाषवदरा-
णीति दशेमानि स्वेदोपगानि भवन्ति ॥ ४६ ॥

मधुमधुकाकोविदारकर्तुदारनीपविडुलविम्बीयनपुष्पीसिंदापुष्पी
मत्तकपुष्प्य इति दशेमानि वमनोपगानि भवन्ति ॥ ४७ ॥

द्राक्षाकाश्मथ्यपरुषकाभयामलकविभीतककुबलवदरकर्णान्वु-
पीलूनीति दशेमानि विरेचनोपगानि भवन्ति ॥ ४८ ॥

तटट्विलपिप्पलीकुष्ठसर्पपंचावत्यकफलयतपुष्पामधुकामदन-
फलानीति दशेमानि कास्यापनोपगानि भवन्ति ॥ ४९ ॥

45. Mridvīkā (ग्राफ़, grape), madhuka, madhuparnī (धुनक,
cocculus cordifolia), mahāmedā,* vidārī (वृं ई कूर्फ़), heyāśarum
gangeticum, kākoli, kshīrakākoli, jivaka, jivanti, śālaparnī,—these
ten are Snehopaga.

46. S'obhānjanaka (मञ्जन), hyperanthera morunga), erandā,
arka, vrischīra (श्वेतगून्), punarnavā, yava, tila, kulattha,
māśhā. and vadara,—these ten are svedopagama.

47. Madhu, madhuka, kovidāra (बकु काष्ठ, baubīnā varieg-
ta), karvudāra (श्वेत काष्ठ), nīpa (कदम्ब), vidula (अश्वत्थ, १७३१ or
हिङ्गल), vimvī (७३१ कूट), sanapushpī, (शण्टोन्न), sadāpushpī (आकन्द),
and prattakpushpī (अपर्ण),—these ten are vamanopayoga.

48. Drākshā, kāmārya (गामार्द्र) parūshaka (परुषक, xylocarpus
granatum), abhayā, āmlaka, vibhītaka, kubala, karkandhu, and
pīlu,—these ten are virechanopaga.

49. Trivrit (तेड्डे), vilva, pippalī, kushtha, sarshapa (मन्निष,
sinapis dichotoma), vachā, vatsakaphala (वैश्रव, wrightea antidy-

* मेदाया वातदोषकरत्वात् महामेदायाश्च वातनाशकत्वात् महामेदेति पाठः
शापीयान् मन्नायवे ॥

रास्त्राश्च (दाहविलम्बनदनयतपुष्पावृक्षीरपुनर्नवाश्च दंष्ट्राग्निर्मय
स्थोनाका इति द्येमानि अनुवासनोपगानि भवन्ति ॥ ५० ॥

ज्योतिष्मतीक्षवकमरिचपिप्पलीविडङ्गशिग्रुसर्वपापामार्गत-
खटुलश्चेतामहाश्चेता इति द्येमानि शिरोविदेचनोपगानि
भवन्ति ॥ ५१ ॥

इति सप्तकाः कषायवर्गः ।

अम्बाअपल्लवमातुलुङ्गाक्षवदरदाडिमथययष्टिकोशीरश्मलाजा
इति द्येमानि छर्द्दिनिग्रहणानि भवन्ति ॥ ५२ ॥

senterica), satapushpá (শতপুষ্প, anethum sowa), madhuka (মধুক),
and mādānaphāṭa (মদানফল, vangeria spinosa),—these ten are
āsthāpanopaga.

50. Rāsna, suradāru (দেবদারু, pinus devadaru), vilva, madana,
satapushpá, vrischíra, punarnavá, śvadaśśhtra (গোক্ষুরি, tribulus
lanuginosus), agnimantha (গ্নিমান্থ, premna verbenaceæ), and
śyonāka,—these ten are anuvāsānopaga.

51. Jyotishmatí (জ্যোতিষ্মতী), kshavaka (ক্షবক), varleria
longifolia), maricha, pippalí, virānga, (বিড়ঙ্গ), śigru (সিগ্রু),
sarsapa, apámārgatandula (অপামার্গবীজ, achyranthes aspera), śvetá,
(শ্বেতপত্রাজিতা), and maháśvetá (মহাপত্রাজিতা),—these ten are siro-
virechanopoga.

These are seven varieties of extracts.

52. Jambu-pallava (জাম্বুপাতা, eugenia jambosa), amra-pallava
আম্রপাতা, mātulūṅga (মাতুলুঙ্গা, common citron), amlavadara
(টকুল), dāśima, yava (যব), yashtika (যষ্টি যধু), us'ra, mrit
(মৌর্য ই হৃষ্টিকা), and lājá,—these ten are chhardinigrāhāṇa.

जानरधंन्यवासकसुखकप अटकाचन्दनकिराततिलकपुष्पी-
वेरधान्यकपटोलानीति दशेमानि दृष्टानिग्रहणानि भवन्ति
॥ ५३ ॥

यटीपुष्करसखवदरवीजकण्टकारिकाटहतीटजबहाभयापिय-
लीडुरालभाकुलीरुद्रङ्गइति दशेमानि दृष्टानिग्रहणानि
भवन्ति ॥ ५४ ॥

इति लिङ्गः कषायवर्गः ।

मिथुनन्तास्त्रिकङ्कलीमनीचरसमङ्गाधातुकीपुष्पपद्मा
पद्मकेयराणि इति दशेमानि पुरीषसंग्रहानि भवन्ति ॥ ५५ ॥

जम्बूयङ्गकीत्यक्काचुरामधुकथालालीत्रिवेष्टकभट्टस्तपयस्यो-
त्पलतिलकप्या इति दशेमानि पुरीषविरजनीयानि भवन्ति ॥ ५६ ॥

53. Nāgara* (नूँटे), dhanyayāsaka (इरानडा | hedysarum alhaji),
musta, parpataka (कतपापडा, chandana, kerātutiktaka (किरेतडा
gentiana chireyta), guḍuchi, hrīvera (वाना), dhānyaka (धने c.
sativum), and patola,—these ten are trisānīgrahana.

54. S'atī (सँटी, curcuma zerumbet), pushkaramūlu (कूड़, costus
speciosus), vadaravīja (वदनवाटिमौग), kaptakārikā (कप्टिकारि),
vrihatī (वाकूड़), vriksharuhā (वांदरा, cymbidium tessaloides), abhayā
pippalī, durālabhā (इरानडा, hedysarum alhaji), and kulīrasrīṅgī
(कौड़ाशङ्गी),—these ten are hīkkanīgrahana.

These are three varieties of extrets.

55. Priyaṅgu, anantā (अनंतमूल), amrāsthi (अमरकुश), katvanga
(कोपंग, bignonia indica), lodhra, mocharasa (मोचरस), samangā
(समशाकश), lycopodium imbricatum, dhātakīpushpa (धातकूल, gris-
lea tomentosa), padmā (पद्मशङ्गी, hibiscus mutabilis), and padma-
keṣara (पद्मकेसर),—these ten are purīśhasaṅgrahana.

56. Jambū, śallakītrak (जलककण्ठकण्ठान, boswellia thurifera),
kachhurā (इरानडा, dolichos carpopogon), madhuka, salmalī

• जानवना इत्यपि यः ।

अश्वत्थश्वटकधीतमोडुस्वराश्वत्थमङ्गुलिकाश्वत्थनाकसोमव-
त्का इति दशेभानि सूत्रसंग्रहणानि भवन्ति ॥ ५७ ॥

पद्मोत्पलनलिनकुमुदसौगन्धिकपुण्डरीकायतपत्रभयुकमित्रकु-
घातकीपुष्पानि इति दशेभानि सूत्रविरचनीयानि भवन्ति ॥ ५८ ॥

दृशादनीश्वदंष्ट्रावल्गवसिरपामाणभेददर्भकुशकायशुद्धोत्का-
श्वत्थानेति दशेभानि सूत्रविरचनीयानि भवन्ति ॥ ५९ ॥

इति पञ्चकः कषायवर्गः ॥

(मोचरम), śriveshta (नवनीतफाँटी), bhrishitamrit (धृष्टमृतिका), payasyā (कैरकाकोनी, asclepias rosen), utpala (नीलोत्पल, nymphaea carulea), and tilakapa (तिनतुल),—these ten are purīshavira jan'ya.

57. Jambū, amra, plaksha (पाकूड़ hieus infectoria), vata (वटे, ficus indica), kapitana (आमड़ा, spondias mangifera), udumbara (यडडूयूर, ficus glomerata), āśvattha (अश्वत्थ, ficus religiosa), bhallātaka (भल, anacardium), asmantaka (बोराड़, pletranthus aromaticus), somavalka (श्वेतखदिर वा कटफल),—these ten are mūtrasaṅgrahana.

58. Padma, utpala (नीलोत्पल), nalina (श्वेतोत्पल nelumbium speciosum, or Fymphaca nelumbo), kumuda (नालकूल nymphaea escolenta), saugandhika (शुद्धी) nymphaea lotus), puṇḍarīka (श्वेतपद्म), śatapatra (ब्रह्मपत्र nelumbium speciosum), madhuka, priyaṅgu, and dhātakīpushpa,—these ten are mūtravirajan'ya.

59. Vrikshādani (मादर epidendron), svadañśhtrā, vasuka (वकुष्प), vasira (अमरुमूल), pāsāpabheda (पाषण कूटो), darbha (डूँल), kuśa, kāsā, guṇḍrā (गुण्ड) utkata* (काजला इक्षुमूल),—the roots of these ten are mūtraverechan'ya.

These are five varieties of extracts.

रन्कट इति पञ्चदेवीवःपाटः। रक्कड़्।

द्राक्षाभयामलपिप्पलीदुरालाभशृङ्गीकण्टकारिकाटशीरपुन-
र्नवातामलका इति दशेभानि काशहराणि भवन्ति ॥ ६० ॥

यटीमुष्णरसलाक्षवेतसैलाहिंश्वगुहसुरसतामलकीजीवन्तीच-
ण्डा इति दशेभानि स्वासहराणि भवन्ति ॥ ६१ ॥

पाटलाग्निमन्थविल्लश्चोनाककाश्लव्यकण्टकारिकाटश्रीयाल-
पशीर्षट्त्रिपथीगोक्षुरका इति दशेभानि शोथहराणि भवन्ति
॥ ६२ ॥

शारिवायकपापामस्त्रिष्ठाद्राक्षपीलुपक्षकाभयामलकवि-
भीतकानीति दशेभानि ज्वरहराणि भवन्ति ॥ ६३ ॥

द्राक्षाशर्जूनपियालवददाडिमफल्गुपक्षकेशुयवषटिका
इति दशेभानि त्रलहराणि भवन्ति ॥ ६४ ॥

इति पञ्चकः कषायवर्गः ॥

60. Drākshá, abhayá, amala, pippalí, durálabhá, sriṅgí
(काकुड़ा शृङ्गी), kañṭakáriká, vriśchíra (बिह्वाति), punarnavá, táma-
lakí (तूहेयामल),—these ten are kāsahara.

61. S'atí (शटी), pushkaramúla (रूड़), amlavetasa, elá
(अलावैट), hiṅgu, aguru, surasá (सुरासी), támalakí, j'vantí, and
chaṇḍá (चण्डकाण्टिक),—these ten are svásahara.

62. Pátala (पाटल), agnimantha, vilva, syonáka, kásmarya
(कस्मर), kañṭakáriká, vrihatí, sálaparní, prīṣniparní, and gokshu-
raká,—these ten are śothahara.

63. Sárivá, śarkará (चिनि), páṭhá (पाकुनादि), manjishṭhá,
(मन्जिष्ठा), rubia manjith), drākshá, pílu, parúshaka, abhayá, áma-
laka, and vibhítaka,—these ten are jvarahara.

64. Drākshá, kharjúra (खैरूरा, phoenix sylvestris), piyála (पिप्लान
chironjia sapida), vadara, láṣima, phalgu (काकुडूरा) parúshaka,
ikahu, yava (यव), and shashtiká (शष्टिकान),—these ten are śramahara.

लाजाचन्दनकाश्मर्यफलमधुकार्करीलीलोत्पलोशीरसारिव
गुडूचीजूवेरायीति दशेभानि द्वाहशमनानि भवन्ति ॥ ६५ ॥

तगरायुधधान्यकण्टकवेरभूतीकावचाकाण्डकारिकाग्निमन्त्र
म्लोथाकामिप्यल्पइति दशेभानि त्रीतप्रथमनानि भवन्ति ॥ ६६ ॥

तिन्दुकामिपालवदरत्थदिरकादरसप्तपर्थाश्चकूर्त्तार्जुनायनारिमे-
हा इति दशेभानि उदहप्रथमनानि भवन्ति ॥ ६७ ॥

विदारिगन्धान्नपथीरहतीकंटकारिकौरण्डकाकोलीचन्द-
नोशीरैलामधुकानीति दशेभानि अङ्गमहप्रथमनानि भवन्ति ॥ ६८ ॥

पिप्पलीपिप्पलीभूलचव्यचिलकण्टकवेरमरिचाजमोदाजग-
न्धाजाजीगण्डीरायीति दशेभानि शूलप्रथमनानि भवन्ति ॥ ६९ ॥

इतिपञ्चकः कषायवर्गः ॥

These are five varieties of extracts.

65. Lājā, chandana, kāsmaryaphala (शोभात्र फल), madhuka, śarkarā, nilotpala, usīra, śārīvā, guṇuchi, and hrīvera (रीरा),—these ten are dāhasāmana.

66. Tagara, aguru, dhānyaka (धन), śrīṅgavera, bhūtika (बुती), vachā, kaṇṭakārikā, agnimantha, syonāka, and pippalī,—these ten are śtaprasāmana.

67. Tinduka (तैन्द), piyāla, vadara, khadira, kadara (कदर), saptaparna, āsvakarṇa (आन), arjuna, āśana (शीतमान), pentaptera tomentosa, and arimeda (रिमेडा),—these ten are udardaprasāmana.

68. Vidārigandhā, priśniparṇī (चकूल, hemionitis cordifolia), vrihatī, kaṇṭakārikā, eraṇḍa, kākoli, chandana, usīra, elā, and madhuka,—these ten are aṅgamardaprasāmana.

69. Pippalī, pippalīmūla, chavya, chitraka, śrīṅgavera, mari-cha, ajamodā (अजमोदी), ajagandhā ajāji (अजगन्धक), and gaṇḍīra

मधुमेधुकानोचरसधिरक्षत्कपाललोघ्नगैरिकप्रियङ्गुगुडशर्करा इति दशेभानि शोणितस्थापनानि भवन्ति ॥ ७० ॥

शालकटफलकदम्बपद्मकातुङ्गमोचरसशिरिषवन्तुलैलवालुकाशोका इति दशेभानि वेदनास्थापनानि भवन्ति ॥ ७१ ॥

हिङ्गुकैटर्कारिमेधवाचोरकवयःस्यागोलोमीजटिलापलङ्कपाशोकरोहिष्य इति दशेभानि संज्ञास्थापनानि भवन्ति ॥ ७२ ॥

(शोणित),—these ten are śūlaprasāmana.

These are five kashāya Vargas.

70. Madhu, madhuka, rudhira (कुम्ह, saffron), mocharasa, mritkapāla (मृक्कपर्श्व), lodhra, gairika (गिरिभाटि, red earth), priyāṅgu, guṛā, and sarkara,—these ten are śonitaprasāmana.

71. Sāla, katphalā, kadamba, padmaka, *tunga (नागेश्वर, ruttleria tinctoria), mocharasa, sirisha, bajjula, clavāluka, and asoka,—these ten are vedanāsthāpana.

72. Hiṅgu, kaitārya (कटुक), arimeda, vachā, choraka (चोरकाटिक), brahmī (ब्रह्मी), golomī (गोलमी), jatilā (जटिमा), palāṅkashā (पलङ्कश), and asokarohipi (अशोकरोहिणी),—these ten are sangyāsthāpana.

(To be Continued.)

CLINICAL RECORD.

A Case of Fistula in Ano. Cure.

REPORTED BY BABU SREE NATH SEN OF TRIVENI.

Kaviraj Dwarka Nath Gupta of Uttarpara came to me for treatment of a sinus, $1\frac{1}{2}$ inch above the anus on the right side. The character of the sore was healthy, and after dressing it with lint and oil with carbolic acid for 2 or 3 days, it healed up. Three days after, however, there appeared on the surface of the cicatrix a small pimple, very painful to the touch. On scratching it with the point of the scissors, and on pressing it, a small quantity of thin pus came out. This raised a suspicion in my mind that the sinus was in fact a fistula, having communication with the interior of the rectum. I passed a probe, but failed to introduce it into the rectum, though it passed a considerable way in. I called Babu Bama Churn Bhattacharyya, Native Doctor, who after one or two trials succeeded in passing the probe direct into the rectum. The point of the probe was felt bare on the finger being introduced into the anus, and we were sure that the fistula was complete.

The good Kaviraj was quite willing to undergo the necessary operation at once; but I persuaded him to postpone it, till I could consult another Doctor. I at the same time gave him hopes that we might cure it without an operation. I took him to Babu Govinda Chandra Datta of Hughli, who, after examining the patient, was satisfied as to the fistula being complete. We asked the patient whether he would like to be cured without operation, and by the use of homœopathic medicines alone. He was rather indifferent, being evidently sceptical of the powers of homœopathy. Govin Babu, in order to convince him that such cures might be effected, read the report of a similar case from a homœopathic book. Kaviraj Gupta was quite astonished at this, and consented to place himself under our treatment.

Babu Govinda Chandra Datta prescribed *Silecea* 6, one drop morning and evening, to be taken for ten days, and then after four days' pause, to take a dose of *Sulphur*. The 1st trituration of *Silecea* was ordered to be sprinkled over the external opening. A lotion of *Calendula* Q m x to ʒi of water was ordered to be injected once a day; and a lotion of *Hydrastis* m x to ʒi of water to be injected once similarly a week after the *Calendula*.

As the external opening of the fistula was very small and the injection did not pass readily, I introduced *Hydrastis* with the point of the probe as far as the rectum.

On examining the sore 15 days after the commencement of treatment the probe passed half way only, the fistula looked blind. After three weeks the patient was attacked with fever, for which no medicine was administered. After the cure of the fever, I tried to pass the probe into the fistula, and to the great astonishment of patient and myself, I found the external opening had healed completely, and the cicatrix presented a depressed appearance, a sure sign of healing from within.

Remarks by the Editor.

The patient had come to me some time after the healing up of the fistula, and from the character of the cicatrix there was no doubt that the cure was thorough. This is certainly a most remarkable case of radical cure of Fistula in ano *without* operation.

A Case of Cholera cured by Common Salt.

UNDER CARE OF AN L. M. S.

Padmalochan, a Hindu, aged about 36, in the employ of a *Chunam* merchant named Gobinchand Raya, was attacked with diarrhoea on the morning of the 14th April last, after keeping up night and enjoying the new year's day. He had several white, watery stools, with a tympanitic condition of the intestines, but as there was no vomiting, no treatment was had recourse to till the collapse was complete. The case presented the following symptoms when I saw him first at about 11 P. M., 18 hours from the commencement of the disease. Stools choleraic (watery and containing white flocculi) and frequent; no vomiting from the first; no urine for the last 6 or 7 hours; eyes sunk and blue colors around them; tongue, lips and nose bluish and cold; face and forehead covered with clammy perspiration; voice whispering; extremities icy cold, but the trunk of the normal temperature; cramps now and then in the calves and toes; pain and burning sensation in the epigastrium; extreme restlessness and internal burning so that nothing could keep the patient in bed; thirst insatiable; pulse imperceptible at the wrist; evacuations scanty, not exceeding an ounce at a time; breathing panting. The cholera was raging in the vicinity. I ordered *Ars.* 6 every $\frac{1}{2}$ hour.

15th April, 3 A. M. Seemed to be worse than before; cramps violent; evacuations copious; thirst inordinate, taking a good deal of water at a time. Ordered *Verat.* 6 and *Cupr.* 6, in alternation, every $\frac{1}{2}$ hour.

6 A. M. Evacuations less; vomited twice; ordered *secale* 6 every hour.

9 A. M. Collapse profound; whole body covered with cold, clammy perspiration. *Carbo v.* 6 every $\frac{1}{2}$ hour.

12 A. M. Breathing hurried, anxious. *Ac. Hydrocy.* 6 every $\frac{1}{2}$ hour.

2 P. M. No amendment. Ordered a dose of 3 grains calomel with 10 of sodæ carb.; and also common salt with arrow-root.

4 $\frac{1}{2}$ P. M. Seems to be better, and the pulse is slightly perceptible at the wrist.

7 $\frac{1}{2}$ P. M. Dr. Sircar saw the patient and ordered to discontinue the salt and to give *Carbo v.* 30 with a view to make the imperfect reaction a perfect one.

1 A. M. Relapse of almost all the previous symptoms; complete collapse again. The *Carbo v.* was stopped and common salt with arrowroot was resumed.

8 A. M. Decidedly better ; pulse fair ; stool semi-solid and yellow ; no urine ; slightly restless. *No Medicine*. Common salt and arrow-root every 2 hours.

2 P. M. No urine ; eyes slightly congested ; pain on pressure over the hypogastrium. *Canth.* 6 every 3 hours.

11 P. M. Has passed urine first just now, after 3 doses of the medicine.

18th April. 11 P. M. Was reported well.

20th. Came to my house for a medicine for his weakness.

Remarks.

This case is instructive in two ways. *Firstly* it teaches how cautious we ought to be in giving the prognosis of a case however slight its beginning may be. *Secondly*, it shows how the medicines, which are thought to be the sheet anchors in cholera, failed to do any good, how the supply of common salt with the food roused the dormant energies of the system, and how cantharis produced its desired effects after the salt was supplied.

Another Case of Cholera.

UNDER THE SAME.

Navakumar, aged about 18 years, grandson of Ramshebak Ghose, of North Entally, was attacked with *Cholera Gastro-Enterica*, on the morning of the 4th of July, and applied to me at 9 A. M., 5 hours from the commencement of the disease. On the previous day he had gone away from Calcutta to attend on his brother, suffering from the same variety of the disease, at Chakdah, a place where cholera had shortly before been raging furiously and was not even then completely absent. These circumstances together with the great frequency and scantiness of the evacuations, pain in the epigastrium, collapse out of proportion to the evacuations, and the burning in the epigastrium, induced me to order *Arsenicum* 6. But it did no good, rather it seemed to increase the cramps in the extremities (very slight at first) to a fearful extent. *Cuprum* and *Secale* were had recourse to with the same disappointing effect. Failing with them I ordered *Verat.* 6, which relieved the patient most charmingly after 4 doses at intervals of $\frac{1}{2}$ hour. The only medicines which I had to prescribe to complete the recovery were *Cantharis* and *China*, the former to bring about the renal discharge, and the latter mainly for the weakness.

Gleanings from Contemporary Literature.

THE FORTIETH SESSION OF THE CALCUTTA MEDICAL COLLEGE.

The annual distribution of premiums and diplomas to the students of this College took place at the Senate House of the Calcutta University on Tuesday evening. Among those present were Dr. Partridge, Dr. Charles, Dr. Macleod, Mr. Sutcliffe, Dr. Cockburn, Dr. Woodford, Dr. Chandra, Rai Kanailal De Bahadur, Mr. Woodrow, Mr. Wood, Dr. Falfier, Babu Digambar Mitra, Raja Harendra Krishna Bahadur, Munshi Amir Ali and others. A few ladies were also present.

Dr. Norman Chevers, Principal of the College, who presided on the occasion, said that, before proceeding to the business of the evening, he had to perform the pleasing duty of presenting to Assistant Surgeon Ram Sundar Ghose the *sanad* of Rai Bahadur, with which title he had been invested by the Government of India. In presenting the *sanad* to Dr. Ghose, the President spoke as follows: Assistant Surgeon Ram Sundar Ghose,—I have been desired by the Surgeon General, in my capacity of Principal of the Medical College, in which you received your professional education, to present to you, upon this particular occasion, the *sanad* or patent, of Rai Bahadur, which the Government have been pleased to confer upon you as a personal distinction, in recognition of your long and meritorious service in the Indian Medical Department. Rai Ram Sundar Ghose Bahadur,—The records of the Surgeon General's Office show that you obtained your diploma in this College in 1947, twenty-eight years ago. Your first mufassal appointment in the Bhil District (Dekkan) enabled you to give evidence of your strength of character and your zeal in the cause of suffering humanity. There, in a remote and wild district, which was then a terror to most of your countrymen, you organised a charitable dispensary for the relief of the almost savage tribes who surrounded you. You early displayed talent as a surgeon, which found ample scope when you held medical charge of the 18th Irregular Cavalry and Malwa Bhil Corps, and more especially when, at Leha, you were deputed to the charge of those wounded, in a raid, by the Kusranis, and performed your work with so much ability and humanity that the authorities' report gained for you a recognition, by Government, of your services at Leha. In the sepoy mutiny of 1857 you were one of the foremost of that great body of loyal native gentlemen, educated in this College, who did good service to the Government, who had befriended you from your early youth. You made arrangements for sending native doctors with detachments to different parts of the district. You, at the same time, held medical charge of the 17th Irregular Cavalry, and of three thousand newly levied troops, horse and foot, acting as patrols. The greater part of your service, in the Upper Provinces, was devoted to the medical charge of civil stations and dispensaries. You appear to have opened four important dispensaries at Bhapawar, at Ambala, at Dera Ghazi Khan, and at Leha. If, in ancient Hindustan, he who dug a well and planted a tree was revered as a public benefactor, what shall be the respect accorded to him who organised four district hospitals for the relief of unnumbered thousands of suffering human beings? You soon became remarkable as a surgical operator, and performed lithotomy in nearly 500 cases. Two hundred of the stones were sent to the museum of this College. So highly were your character and ability approved of by Dr. Green, afterwards head of the Medical Department, that you were

promoted to the first grade of your rank when you were only in the eleventh year of your service. For nearly 15 years, you have held important posts in Bengal, especially in Calcutta, as superintendent of one of the vaccination divisions. In performing this duty, which is never assigned to any but men of considerable mark, carefully selected by the Surgeon General, you have always received the highest approval of the Superintendents General of Vaccination, Dr. John Macpherson and Dr. Charles. Your energy in spreading vaccination throughout your districts has been signal ; and, in 1864, you aided Dr. Charles so validly in stamping out an epidemic of small-pox, which had invaded Calcutta, that you received the thanks of the Bengal Government. Your immediate superior reported in February last that, within two years, you had vaccinated 1,63,000 persons. Rai Ram Sundar Ghose Bahadur,—As principal of the Medical College, I feel great pleasure in being directed to present your *sanad* to you, in presence of the Director General of the Educational Department, the Surgeon General, and the Superintendent General of Vaccination, a large concourse of our students witnessing this act of honor, and, I deeply hope, taking example by it. I trust that, in after years, your children will look with gratification upon that *sanad*, telling their children that, although their ancestor, whom the Government was pleased to reward and honor, was a member of a service in which power and great wealth are not obtainable, all who knew him, from the Government downwards, esteemed him for his exemplary character and good service, and accorded him the highest praise that any officer can wish for—in declaring that *he did his duty*.

Dr. Ghose briefly returned thanks for the honor done him in the bestowal of the title.

The President then distributed the premiums and diplomas to the students of the College. Among the advanced students thirteen obtained premiums of watches, medals, and surgical cases, and Babu Kali Prasanna Mukarji received a scholarship of Rs. 20 per month. Khwajah Abdul Gani's scholarship to the best student of the fourth year was awarded to Radha Ramau Ghose ; Mr. Macdonald's prize to the best student of the 2nd year was given to Abinash Chandra Banarji ; and Hospital Apprentice J. G. Fleming obtained a certificate of honor in Clinical Surgery. Twenty six certificates of honor were also bestowed on the students of the English class. In the Military class, which is principally, if not chiefly, composed of Muhammadans, a gold medal was given to Shaik Nizamuddin for general proficiency, and thirty-four other students obtained diplomas and prizes. Haralal Sen and Chandicharan Guha received the gold medal for proficiency in the Bengali class and the Bengali Apothecary class respectively, while no less than one hundred and thirty-one students in both these classes received diplomas and prizes.

On the conclusion of the distribution of the diplomas and premiums, Dr. Ewart, at the request of the President, read the report for the preceding year, which was as follows :

The fortieth session of Medical College of Bengal closed on the 31st of March last.

During the past year several changes took place in the professional staff of this institution.

On the 29th of September this College sustained a great loss by the death, in England, of Surgeon Major Surji Kumar Goodeve Chakarbatti, M. D., one of the Physicians to the Hospital, and Professor of *Materia Medica* and Clinical Medicine. He received the larger portion of his medical education in this College. He was one of four students of this College who were sent by Government to complete their education in London, under the care of Dr. Henry H. Goodeve. Dr. Chakarbatti was an example to his countrymen of the fact that true eminence as a scientific

physician is attainable by the native of India. I believe that the tidings of his death were received with regret by every person in the College, in which he taught for 24 years. The Council unanimously decided that the College should be closed on one of his lecture days, as a public expression of sorrow and of esteem for his memory.

Dr. Crombie, who officiated for Dr. Chakarbatti from the 9th of April, 1874, was relieved by Surgeon Major Rajendra Chandra Chandra on the 20th February last.

Dr. J. Fayrer, C. S. I., retired from the service and from this institution on the 1st December, on his appointment to the post of Physician to the Secretary of State for India. Dr. Fayrer's professional eminence is too generally recognised to need any eulogy from me; but I should be wanting in duty if I did not state that, during a period of nearly fifteen years, Surgeon General Fayrer did at least as much as any man has done to gain for the College and Hospital that high reputation which they at present hold.

Mr. S. B. Partridge, F. R. C. S., was permanently appointed Professor of Surgery and Senior Surgeon, on the date of Dr. Fayrer's retirement. Dr. W. J. Palmer was at the same time appointed Professor of Anatomy and Second Surgeon, Dr. Kenneth McLeod continuing to act in that chair.

Dr. J. Phin-Smith having resigned, Mr. D. G. Clerk succeeded him as Lecturer on Dentistry and Dentist to the Hospital on the 2nd of February.

On the 28th of December Dr. E. Lawrie was appointed to deliver a course of lectures on Hygiene, in consequence of the absence of the Sanitary Commissioner for Bengal on special duty.

Babu Umesh Chandra Mitra became entitled to his degree of Bachelor of Medicine at the last University Convocation.

Shibu Ram Boruah, from Assam, was successful in the competitive examination held in February last for the Indian Medical Department. He stood fourteenth on a list of twenty.

Primary or English class.

When the season opened, 319 students resumed their studies. Added to these were 161 new admissions and 36 re-admissions. Consequently, the full strength of the class was 516, the highest since the College was opened. The strength in the eight preceding years was 504, 445, 388, 341, 373, 343, 233, and 196.

Of the 197 newly admitted students, 21 brought scholarships from other colleges and schools; free presentations were, as usual, given to 10 who obtained the largest number of marks in their University examination; 143 joined the paying class, 21 hospital apprentices were admitted, and 2 entered as casual students.

Within the session 6 senior scholarship-holders and 4 paying students passed their final examination. In the Hospital Apprentice class, 7 passed their final college examination, and 9 passed the local examination,—in all 16.

During the year 4 senior and one junior scholarship-holders and 5 scholarship-holders from other institutions, 2 free students, and 132 paying students ceased to attend. One died, 15 were rusticated for a year for copying at examination, and 3 were dismissed for misconduct. Two hospital apprentices were transferred to regimental duty, 1 deserted, and 1 resigned the service.

Hospital Apprentice Class.

When the work of the session began, 25 hospital apprentices resumed their studies, and 21 were afterwards admitted. The total strength of this class was therefore 46. It has been shown above that 16 passed, and 4 left the College.

Speaking generally, the conduct, attention, and discipline of this class have been exemplary; and I am glad that I am now, for the first time, since the education of this class was resumed in 1869-70, in a position to assert, from my own personal experience here, that, as long as care is taken to send us down none but healthy, well-conducted, and intelligent lads, the training of this class in College may be confidently looked upon as promising almost certain success. I attribute the present well-being of this class in a very large measure to the attention and judgment with which Mr. Apothecary W. A. Kidd exercises his duty of supervision and tutorial instruction.

The strength of this class has now been fixed at 60.

Paying Students.

At the opening of the session, 233 paying students were at work. In addition to these, there were 109 new admissions and 36 re-admissions; 10 scholarship-holders and 4 free students came upon this class.

Senior scholarships were obtained by 8, and junior by 5 pupils of this class, 152 left the College.

At the end of the year the strength of the Paying Class was 227 against 233, 210, 183, 153, 125, 86, 86, 65, 54, 34, 31, 31, 33, and 9 in the fifteen years which have elapsed since this class was established in 1860-61.

Results of the First and Second University Examinations.

The number of candidates of the English class, who appeared for final examination, was 43, out of whom 13 passed. 166 candidates offered themselves for the first examination. Of these 38 passed, 2 in the first division.

Native Medical Pupil or Military Class.

At the re-opening of the College, 72 students of this class were present; 53 new students were admitted, and 3 rejoined, bringing the strength of the class up to 128. Of these 27 passed their final examination, 16 were removed for misconduct, 2 were transferred to regiments, and 1 was allowed to leave the service. At the end of the session the strength of the class was 82, of whom all who were available, numbering 76, were transferred on the 10th of June, under an arrangement which has been long pending, to the Temple Medical School at Bankipur.

Dr. Woodford's report of the *Bengali Classes*, who are now educated under his superintendence at the Campbell Medical School, Sealdah, is annexed. It is a very interesting document, and contains several important suggestions. It shows that the full strength of the classes was 818, of whom 112 passed, and 54 were transferred to the new medical school at Dhaka.

Upon the withdrawal of the Military Class, all immediate association between the staff of native teachers of those classes and this College ceases, except in the duty of examining the Bengali classes. I can only reiterate the fact, which I have submitted in many previous reports, that these officers are gentlemen of the highest personal and professional character, who have long worked with me admirably, and whom I now thank most sincerely for the invaluable aid which they have given me. The vernacular classes, which are now nearly a thousand strong, have been made what they are by the senior teachers—Rai Ramnarain Das Bahadur, Surgery; Tamiz Khan, Khan Bahadur, Medicine; Rai Kanai Lal De Bahadur, Chemistry and Medical Jurisprudence; Assistant Surgeon Mir Ashraf Ali, Midwifery; Dr. Jagobandu Bose, Materia Medica; and Assistant Surgeon Chandra Mohan Ghose, M. B., Anatomy. I need not recommend these valuable officers to the Superintendent of the Campbell Medical School, as he has already had full opportunity of forming a judgment of

their mode of working ; but I earnestly solicit for them the approval of Government and of the Medical Department.

The number of students who passed their final examinations at the end of the session was 165, of whom 85 are medical practitioners, and 80 assistants in civil and military hospitals.

The schooling fees, paid by the English class, amounted to Rs. 24,695 against Rs. 23,543 and Rs. 17,887-8 in the two immediately preceding years.

The Museum.

The number of pathological preparations, added to our collection during the year, has been 177.

Dissecting Department.

Three hundred and eighty-four subjects were made available for the students.

The Library.

The number of books purchased during the session was 70.

Seventy-four were presented. Of these 63 were valuable standard French works, the gift of Dr. Tonnerre.

The collection of works of authors, who have either taught or studied in this College, now number 277. Many have still to be collected.

The Hospital.

The number of patients who obtained relief at the hospital in the year 1874 was 49,535.

As I do not know whether it will be my privilege to submit the next annual report, the fifteenth since the Government were pleased to appoint me as Principal, I shall offer the following very brief statement of the progress, which the College has made during these years.

In 1861-62 the total strength of pupils was 409. When the Bengali class was removed, in November, 1873, it had augmented to 1,441. Last session the strength of the English class alone was 504. In 1861-62 the schooling fees amounted to Rs. 1,842-8 ; in 1873-74 they were Rs. 35,136-8, not including those of the Bengali classes for four months. Last session the fees received from the English class alone amounted to Rs. 24,695. In 1861-62 the number of paying students was 33 ; in 1873-74 it was 1,076. I submit these results with pleasure, but without any wish to claim more than my due share of credit for bringing them about. These results were to be foreseen. The College was made over to me by my predecessors, Drs. Eatwell and Partridge, in admirable working order. My colleagues have always been a body of the most eminent medical men of their time, any one of whom, standing alone, would have given importance and reputation to the school. They have worked with me, like brothers, up to this day. Nearly all of my assistants have been the very persons whom I would select if I had to perform this very laborious and responsible duty over again. All that I claim for myself is that I have worked as hard as any one of the staff, to the best of my ability.

DR. CHEVERS'S ADDRESS.

The PRESIDENT then addressed those present as follows :

Gentlemen,—It is perhaps right that I should explain why I to-day occupy a place which, on previous distribution days, you have always seen filled by better men. My esteemed colleague, the members of the College Council, have desired me to preside on this occasion, and I am glad to be able to make it an opportunity of addressing a few practical words, both to those who are already our students and to those who are about to join us as students in the session which begins to-day.

Every honest trade and profession, which enables man to earn his bread by the sweat of his brow, is good and honourable ; but he is wise and fortunate above all other men who elects and practises with faithful industry a profession which, while it affords him the goods of this world, directly prepares and fits him for the enjoyment of the blessings of the world to come. Such are the professions of the priest and the physician.

Until comparatively modern times, these professions were inseparable—the priest was always the physician. Every really great religious code, which my reading has enabled me to study, is replete with laws evidently ordained with a direct intention of preserving the life and the health of man. A little of my rare leisure was devoted, some years ago, to illustrating, what I believe to be the patent fact, that the moral code is essentially a sanitary system, and was given to us as such for our preservation by All-merciful Wisdom. Of this truth we find plain demonstration in the trite statistical fact that no large class of men have so good an expectation of long life as the clergy have.

It was long ago declared—*Neque ullâ aliâ re homines propius ad Deos accedunt, quam salutem hominibus dando* (in nothing does man more nearly approach the gods than in giving health to mankind). Assuredly, he to whom so high and so noble a function is delegated by his Maker ought to be the possessor of a very eminent character. Holding, as he does, an absolutely sacred trust, the least that can be expected of him is that, speaking as our University does to every man who receives a degree, he should “in his life and conversation prove himself worthy of the same.”

Listen to the *shastral* view of the character and duties of a good physician, who, by caste, was very nearly allied to the Brahman. The London College of Physicians of to-day could not if they studied to do so for a year, embody, in a single page, more of the principles which all good physicians recognise and act upon. “The physician should always be dignified in his deportment, correct in his manners and habits, gentle and kind, amiable, cheerful, and collected. His language should be mild, candid, and encouraging, rather like that of a friend than that of an acquaintance, and he should always be ready to assist the sick. His heart should be pure and charitable, and he should carefully follow the instructions of his *guru* and of his predecessors. Such a physician should possess a character for strict veracity, be of calm temper, and of the greatest sobriety and chastity. He should be a man of sense and benevolence, and his constant thought should be how he is to do good. A person may be afraid of his father and mother, friends and master, but not of his physician ; so the physician should be more kind and considerate to the sick than a father, a mother, a friend, or a master. To these qualities should be added that of affection for learned friends and the constant habit of visiting the sick, and seeing them treated by experienced persons. Without such a combination of qualities, knowledge will retard, rather than advance, his progress. He should know the causes and varieties of diseases, and the means of preventing and curing them, and have the reputation of accomplishing cures quickly. He should study to remove curable diseases, but avoid treating healthy persons. A good physician

will continue to visit his patient diligently, examine him carefully, and be not fearful but give medicine always when the patient can live.* It must be admitted that a person somewhat less eminently gifted than the great physician of the shastras may be usefully employed in the practice of medicine; but, if he be not humane, truthful, honest, laborious, and deeply interested in his work for its own sake, we say to him. "Touch not this great profession, this sacred thing, this trust from heaven, this matter of life and death; go forth into your battle of life in a lower rank, in some capacity which is less than holy, and combat with some meaner weapon!"

Concluding that some of you have elected to join us, allow me a very few words with regard to the position of students in this College. I think that one of the best rules of leadership is that a leader should, whenever the intellects of those led are sufficiently appreciative, explain his real motives and mode of governing clearly to the governed. In doing this, he neither drags his subjects after him, nor drives them before him; he enables them to work intelligently with him in perfect consentaneous action. I am glad that I find, on this occasion, an opportunity of giving you some insight into our system of collegiate discipline; and I rejoice also that, in addressing, as I trust I do for the first time, a body of medical students, the majority of whom have passed the First Examination in Arts, I need not apprehend that I am speaking to men who will not be able both to comprehend my meaning and to think with me.

Like all other teachers, we of the Medical College find some difficulties in the management of our students—natural indolence, the truant spirit, that reticence and want of candour with which the governed so generally endeavour to baffle the Governor, a want of original observation, (which however, only becomes a rather serious drawback after the stage of studentship has passed,) want of punctuality, a tendency to complain about trifles, and a quiet stubbornness of self-will and a tendency to resist authority which appear to be the fruit of undue parental indulgence in early youth. He will become a real practical reformer in Bengal who learns to deny his favorite son everything which he knows will do him harm. Against the most prominent and objectionable of these faults we set our faces in implacable opposition, but without any violence; and whenever we do so, we succeed in enforcing right, which our might generally enables us to do without much severity. Considering the great number and variety of our students, punishments are very rarely inflicted in the College. Still it is known to all that there exists, in the hands of the Principal, a power of enormous strength and weight—that of instant dismissal, without the slightest hope from appeal. It is of course never inflicted except in cases of very grave offence approaching to crime, such as copying at examination, or in instances of gross insubordination, or wilful disobedience of orders. I say that we rarely exert this power, but I have always been prepared to exercise it, should occasion occur even up to the point of expelling the whole College. I was very near it once, when, learning that a class numbering 128 had mutiniously refused to attend a lecture, I instantly issued an order expelling them to a man, informing them that their places could be readily supplied. I repeat that, practically, punishment scarcely enters into our system. But a sentence, once passed, is seldom or never revoked. In this we find that there is true mercy. When we strike, we strike surely—not vengefully, but for the sake of example, *ut pœna ad paucos, metus ad omnes perveniat* (so that the punishment may smite the few, that fear may run through the multitude). I have always pursued one straight line of action, and I would recommend it to my successors, always to act unflinchingly as I

* Wise's History of Medicine.

have thought right, without being deterred for one moment by the knowledge that great personal inconvenience to myself, unpopularity among the students, an evil reputation throughout Bengal, and even temporary difficulty with the Government would immediately follow my action. Proceeding thus, I have never sustained a single reverse, but have gained a perfect victory in several battles where it appeared for some anxious days that the prospect of success lay rather in the opposite ranks.

In the shastras, the portrait of the student of medicine who really deserves the name (because he alone is a student who honestly studies) is scarcely less life-like than that of the true physician. "The character of the successful student, after leaving his preceptor, should be active and studious to find out the proper meaning of the difficult passages of the shastras he has learnt by heart. Should these passages not be understood, or should the student know the shastras, and not the practical part of the profession, he will be like an ass carrying a heavy load of fragrant wood without discovering and enjoying the fragrance of his burden.*

This College calls for in its students many of those qualities which the shastras demand in the physician. The student must be intelligent, truthful, punctual in all his attendance, and strictly obedient. He must be in the plainest sense of the term, a gentleman,—a condition which is altogether personal, and quite independent of rank and social position, always remembering that he who is, in truth, a gentleman can never stand low in the social scale. The gentleman is religious, moderate, honest, generous, courteous, faithful to all his duties and obligations, diligent in his own business, but even more sensitive and more scrupulous in those things which affect the welfare of his neighbour than in those which advance his own interests. His thoughts, if not his words, are full of such ideas as these, "I have been in error. I will make compensation. I am not the most worthy here. Give my brother his share. There is enough for us all. Let us all start fairly. He has fallen; let us pause and sustain him. He is my enemy, but there is good in him. I rejoice in your well-earned success; mine is in the hands of God." What the priest is in the church, the gentleman is in society and in college. Wherever he is, his presence acts as an antiseptic; it keeps the moral atmosphere pure.

Several English schools are remarkable for the fact that they make their pupils gentlemen. Among these are Eton and Rugby, Guy's and St. George's; and it is certainly very observable how extremely rarely a worthless, base-minded man enters the world through one of those stately portals. The medical teachers in Calcutta have a good and plastic material to deal with. The native of India generally is capable of learning everything the European can teach him; his powers of steady sustained study are,—if he would only exercise them throughout his life, and not discontinue them, as so many do at the moment of success, just at the point when the slow Englishman begins to warn to his task,—quite without parallel within my observation. Possibly a German may be able to study as steadily as a Hindu can. No native of the United Kingdom, with the exception of the Irishman, at all approaches him in readiness of speech and fluency of expression. Whenever he may determine to close to essay "fine" writing, and places Dr. Samuel Johnson's periods and the phrases of the slang dictionary somewhat aside, he will be recognised as a writer of signal facility, and great power of expression. His proverbial cowardice is a mere phantom of the imagination. In the next generation, it will never be heard of, if native fathers will only teach their children that true courage is a virtue. In woman, and in Bengalis, cowardice is a socially authorised habit, not an original mental defect. I can imagine a stout potentate seated

on his masnad at Murshidabad, exclaiming. "You Bengalis are cowards; go forth and teach your children so. It will save you a vast deal of trouble, I will do all the fighting of the province!" Most assuredly, the Bengali surgeon is no coward in the practice of his profession. Still, again, no lecturer ever had a more quiet and attentive class than he who lectures in India. The native of this country is, when he equally avoids servility and an imitation of English abruptness, one of the most courteous of nature's gentlemen.

It would be hard if, in a College so well appointed as this, and with students disposed as ours are, we failed to send out into Indian society many medical men who are also gentlemen. In the training which we give, we never lose sight of the inculcation of general good behaviour, punctuality, and tenderness to the sick, and perfect straight-forwardness. We are never intentionally unkind, are always ready to pardon a venial error or oversight frankly admitted, but we do not hesitate to give its full flow to indignation whenever we detect an equivocation or any act of wilful neglect affecting the welfare of the sick. The consequence is that our students are generally remarkable for their frankness, unaffected manners, and manly honesty.

Now, towards the end of my active career, it is a true pleasure, as it will be a real solace in the unsolicited inertness of my future, to review in memory the large body of distinguished students who have gone out into public life from this College under my own eye, as well appointed as regards professional lore, and as well qualified for practice and contact with the world as regards high character and gentlemanly bearing as any other class of students with whom it has been my fortune to become acquainted. On the other hand, I regret to be constrained to acknowledge that there have been a few who, as regards their neglect of study, after leaving us, have realised the idea of the four-footed stoic of the shastra stumbling forward under a load of fragrant spices, and have carried into their practice the maxim of that sneering revolutionist, Monsieur D. Alembert, that certain men exhaust their industry in getting places, and so have none left for performing their duties.

This remark affords you a hint, not so pleasantly suggested as I could wish, of the fact that your old teachers watch with cordial good will your progress after you leave this College, and that they lose no fair opportunity of advancing your best interests. Thus the bahadurship, the sanad of which you have just seen conferred upon our esteemed friend Rai Ram Sundar Ghose Bahadur,—a dignity which had never been conferred upon a medical man since the time of Akbar, was obtained for Assistant Surgeons upon the solicitation of the Council of the Medical College. The entire College history of every passed man lies constantly ready in the College Office. There is, possibly, record of his little crimes, but it is never brought against him (had his errors been great ones, he must have passed out of College by a shorter route); there also are ample memoranda of the examinations which he has passed, of the scholarships, the prizes, the certificates of honor which he has won. Hence, of necessity, after he has entered the service, and until he shall have made a reputation there, the Government and the Medical Department derive the whole of their knowledge of his character and qualifications from his College. At the end of his septennial period of service, his knowledge is tested by a series of questions proposed by his College professors, which, being perfectly plain and easy, are nothing to him who has read steadily and practised conscientiously, but which are utter confusion to him who has never opened a scientific book, or fairly studied a case since he passed his examination. Still, again, when good service and sound knowledge have won for him the highest distinction with which Government rewards native physicians, the Medical Department,

with a chivalrous delicacy of feeling which ought to command his fullest gratitude, his highest admiration, bids him repair to his old College, and there receive, from the hands of the Principal, his *sanaad*, the time-honored reward of merit, in presence of the Surgeon General, the head of the Educational Department, of the best and noblest of his fellow-citizens, of the most erudite and distinguished of his professional brethren, European and native, and of his own nearest and dearest personal friends. This, in the sight of a throng of students who, thenceforward, adopt the ideal of his career as a model for imitation.

To-day, in the first year of the fifth decade of its existence, the Medical College of Bengal may be said to have commenced a new life. It has made over vernacular teaching to other schools, and it will now devote itself to the instruction of a probably small but very select class, every member of which will bring with him the evidence of a sound preliminary education, in the fact of his having passed the First Examination in Arts. A new Surgical Hospital and some new College Buildings are promised by the Government. Thus our students, under the new regime, will probably have every advantage which the medical schools of Europe can afford, in addition to that inestimable boon, in which we have always been endowed beyond all other schools in the world, perfectly unlimited opportunities in the study of practical anatomy.

I would strongly advise our First Arts men, thus admirably equipped for study, to take one valid step in advance of their predecessors, *by endeavouring to cultivate the faculty of original observation*. This is a power which is not innate in every man, which is not always to be acquired by education or by any mode of study, however wide and deep. I could now point to men in London who justly hold positions of great eminence in our profession, who do not possess one single spark of it. But it is a faculty, the germ of which may always be brought to fructify by education. Without entering into any metaphysical difficulties, I would say to my students, "You will never become discoverers such as Harvey and John Hunter were, or succeed in doing what William Gull and Thomas Tanner have done, receive into your minds the whole body of the science of medicine, absolutely freed from all confusion and impurity, and use it, for the good of your sick and the teaching of your pupils, as if it were the plainest matter of ordinary common sense, I say your minds will never be able to see so far or so comprehensively as these great men have done, unless you leave off the practice of learning medicine by "rote," and not by "heart." To be an accurate, an original, or a comprehensive observer, you must first have a vivid interest in your subject, not as one which will, hereafter, bring you a house and rupees, but as a wondrous and beautiful mystery into which the Great Master of All Science will vouchsafe you glimpses, as he did to Newton, Davy, Herschel, Brewster, and Faraday, if you come duly prepared with observation and thought. I would then say, "Read less than your predecessors have done; think, reflect a great deal more. Do not 'mug'; 'study.'" At every step, pause to say, I have committed this to memory, but do I thoroughly understand it? No. Then seek more advanced students, and never rest until you have it explained. Read carefully the works of original thinkers—Shakespeare, Sir Thomas Brown, John Hunter, and Thomas King (although these two are obscured by their involved style), Claude Bernard, and John Simon; study the writings of largely comprehensive thinkers, Tanner, Paget, Owen. Associate with men who think originally, but not wildly. Place yourself as nearly as possible in contact with those of your teachers who display originality of thought. Spend as much of your time as possible in the hospital and the *post-mortem* theatre, and there study the development of disease just as observantly as a botanist watches the unfolding of a flower;

an exquisitely natural process with which a century of "cram" could never make him intimate; but which, once seen, is impressed upon the mind for ever. Mark me! I say "for ever"! True science is undying; it is of eternity.

Then, in your fourth and fifth years, take up some dark subject, such as the pathology of the liver, and, working as you will then have learnt to do scientifically, during every moment of leisure, for ten years, try fairly whether you can advance our knowledge of the subject one or two steps farther than Busk, Virchow, Frerichs, Harley, and Murchison have done. A ray of novel truth will, not improbably, slowly, but steadily, dawn upon you. What pure delight, what recompense for labour is this! To plant our foot upon an upward step of the temple of science which has never been reached by the foot of mortal man before! If, however, after fair trial, you fail to penetrate to new light, to do more than learn well what others have observed, be content to recognise the fact that, although you are not gifted with powers of original observation, your mind has still gone through a noble educational exercise which will prepare and strengthen it for all future labour. You will find yourself in the position of a well-trained but unsuccessful candidate for the India Civil Service—equal to almost any other work which you may desire to undertake.

Gifted as the native of India generally is with an admirable memory, which only needs judicious cultivation, and with almost unlimited powers of study, he will, immediately he appears as a discoverer, be entitled to claim a place beside the greatest physicians of Europe. May we all be spared to see that day!

The President, who was frequently cheered throughout his address, was received at its close with deafening shouts of applause. The meeting then broke up.—*Englishman*, 18th June 1876.

We have to tender our best thanks to the Editors of the following Periodicals for regularly exchanging with us :—

The Indian Medical Gazette.

The British Journal of Homœopathy (H. Turner & Co., London).

The Monthly Homœopathic Review (H. Turner & Co., London).

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The United States Medical and Surgical Journal.

The American Homœopathic Observer.

The Western Homœopathic Observer.

The American Homœopathist.

The New England Medical Gazette.

El Criterio Medico (Madrid).

La Refoja Medica (Madrid).

La Homœopatía (Bogotá).

(We have not received these Journals for some time past.)

The Indo-European Correspondence.

The Hindoo Patriot.

The Bengalee.

The Indian Mirror.

The Bengal Times (formerly *The Dacca News*).

Native Opinion (Bombay).

The Englishman : Saturday Evening Journal.

The Indian Daily News.

Mookerjee's Magazine. (New Series.)

The Bengal Magazine.

The Oudh Excelsior.

Sir William Jones's Works. (Publishing in Series.)

The Calcutta Excelsior.

The Tattabodhini Patrikā (Bengali).

The Soma Prakāsa (Bengali).

The Hālisahar Patrikā (Bengali).

The Bāmabodhini Patrikā (Bengali).

The Banga Darshan (Bengali).

The Arya Darshan.

The Amrita Bāsār Patrikā (Bengali).

The Samāj Darpan (Bengali).

The Sahachara (Bengali).

The Saptāhika Samāchāra (Bengali).

The Duta (Bengali).

Rāmāyanam : Devanāgar Text with Bengali Translation (publishing in series.)

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THE
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MEDICINE

VOL. VIII.] August 1876. [NO. 2.

PROCEEDINGS OF THE INAUGURAL MEETING OF
THE INDIAN ASSOCIATION FOR THE
CULTIVATION OF SCIENCE.*

The Inaugural Meeting of this Association (founded by resolution of subscribers in meeting assembled on the 15th January last) was held on Saturday, the 29th July 1876, at the new house given to it by Government, "under the presidency of Sir Richard Temple, and in the presence of the *élite* of Native

* Our readers will no doubt be gratified to see that the idea of a Science Association for the Natives of India, first started in this Journal in 1869, has, though after the lapse of half a dozen years, become embodied in reality. We publish the proceedings of the Inaugural Meeting here out of regard for the fact that this Journal was the first vehicle of the project, and also as a homage to Homœopathy which we look upon as the latest and the most glorious discovery of the noblest of sciences, the due appreciation of which is inevitably to follow the thorough cultivation of Science. For it is our belief that before the mind is conversant with the subtle forces of nature, and with the ultimate structure of bodies, the distinction of great and small sinks into utter insignificance. It is the aggregation of the small that constitutes the great, and an entity, however small, is an entity still, and exerts its forces upon all other entities, and therefore is not to be ignored or despised.

Society, of the votaries of science in this town, and a crowded audience filling every nook and corner of the house. Indeed, the crowd was so great that many gentlemen and some ladies too had to go away for want of room. Nothing could be more gratifying to the promoters of the Association than this gushing enthusiasm among our educated countrymen."—*Hindoo Patriot*.

A little after half past four o'clock, the Honorable President opened the proceedings by calling upon Dr. Mahendra Lal Sircar to deliver the Introductory Lecture.

Dr. Sircar then went on as follows :—

HONORABLE SIR,

On my reporting that the Committee of the Science Association had fulfilled the main conditions of your minute, Your Honor expressed a wish that the Institution should be opened at once, and that its opening should be marked by an Introductory Scientific Lecture. I naturally turned to Father Lafont as the fittest person to give the lecture, but the Rev. gentleman was immoveable. He insisted that the Lecture should be given by me and not by him. Your Honor's pleasure was in the same direction, and I had no other alternative than to make my appearance as I have done here before you. A sorry appearance that will be in every respect. I am fully conscious of my utter incompetency for the task, and if, in spite of that conviction, I have agreed to the proposal, it is because I thought that the lecture will at least serve one purpose—that is, in failing to introduce the sciences to an audience like this, it might succeed in introducing the association to their kind notice and support. The failure of the lecture, as a scientific lecture, will demonstrate all the more pointedly and impressively the necessity of a training school of science like the one we are going to open to-day.

Now then Gentlemen with your permission.

There is nothing mysterious in Science. It is, indeed, in my humble opinion, the key to all the mysteries of creation. It is nothing but knowledge, and when I say that I of course mean positive knowledge. All true knowledge has necessarily an objective basis, and having an objective basis, all knowledge ought to be verifiable. Knowledge, in correspondence with the infinity of nature, must be infinite. But bewildering as that infinity is, there is this relief for the mind that attentively con-

templates the varied spectacle of the Universe, that it can find resting places on the unities that run through and bind that infinity. I shall not endeavour now to glance at the order into which the apparent chaos of the whole visible Universe can be reduced by the spell of Science. I shall merely touch upon the few forces, and very few they are, which are found to underlie and govern all the phenomena that come within the domain of our cognitions.

All our notions of force are derived from the force that we exert by the exercise of our volition, and the manifestation of that force is seen in the production of motion. Whatever, therefore, produces or tends to produce motion, we call force.

One of the earliest forces known is that which resides in the lodestone. This force is exerted in attracting iron. But it is not only iron that is attracted by the lodestone. One lodestone is found to attract another lodestone when presented in certain aspects to each other, and repels it when presented in the opposite aspects. This is unmistakable evidence of some force residing in the lodestone. We shall presently see how we can, by the aid of recent discoveries of science, produce at will the force of lodestone of almost unlimited intensity. •

Let us see what other forces there are in Nature.

Here is a bottle containing a substance called potassium. I take a piece out of it and throw it into water, the water at once takes fire and burns, heat and light being disengaged from the energetic union of the potassium with one of the elements of water, oxygen.

Again, here in this little saucer I put some potassic chlorate and sugar mixed together, and drop upon it a drop of strong sulphuric acid, and instantaneously there is combustion, the play of chemical affinity between the sulphuric acid and the potassic chlorate is followed by the display of heat and light.

Has chemical affinity other properties? If we examine it under particular conditions, we shall find that it has other and very remarkable properties indeed. If we take a plate of zinc and put it in a vessel containing dilute sulphuric acid, immersing it partially, it dissolves, or in reality enters into combination with sulphuric acid in the vessel. Here again heat is disengaged, but not intense enough to cause ignition as in the other instances.

If, while the immersed portion of the zinc is undergoing change, we partially immerse a plate of copper in the same vessel, taking care to keep it separate from the zinc, and if now we connect the free or unimmersed parts of the two metals by a metallic wire, we shall find that the chemical action in the vessel becomes more energetic, the zinc dissolving with greater rapidity, and the wire, to all appearances the same as before its contact with the metals, has acquired remarkable properties, of which you will have strong evidences just now. I hold the wire over and parallel to the long axis of this magnetized needle suspended on a point and free to move about, and immediately the needle turns. Instead of holding the wire over, I hold it under the needle, and the needle turns again, but in the opposite direction. If I reverse the direction of the wire, keeping it of course still parallel to the long axis of the needle, you will find its turnings or deflections are exactly contrary to what they were before. These facts we translate into more convenient language. Thus assuming that there is some sort of current passing from the copper back again to the zinc in the wire, to which we give the name of electric current, we say that when an electric current passes in the direction from the north to the south pole of the needle, and over it, it turns to the east; and when under, it turns to the west, and *vice versa*. Thus we can intensify the movement or deflection of the needle by taking advantage of these facts; and thus it can be made, as it has been made, a most delicate test of the presence of such currents, when they are inappreciable by any other means. The magnetic needle, under the influence of such currents, has been utilized in the virtual annihilation of distance and time, by the construction of the electric telegraph, the grandest and the most useful of the modern achievements of science.

If, instead of a single vessel containing dilute sulphuric acid, and plates of zinc and copper partially immersed and connected by wire, as above described, we have a number of vessels so arranged that the copper of the one shall be connected with the zinc of the next, and so on, and the zinc of the first be connected by wire with the copper of the last, then we have what is called an electric battery, of which a single vessel is called *cell*, *couple*, or *element*. By such an arrangement the current developed in each cell is greatly multiplied and increased in intensity. Zinc and

copper and sulphuric acid are not the essential components of an electric cell. Any two metals and a liquid which acts upon one of them more energetically than upon the other, and which serves as a conductor of the current developed, will form a good cell.

Let us see what other effects the current in the wire can produce. If I divide the wire in the middle, and connect the extremities by a piece of slender platinum wire, slenderer than the divided wire which joins the ends or terminals of the battery, you will see that the platinum wire becomes heated to red heat at first and gradually to dazzling white heat. Thus you see that the heat and light which were disengaged from the play of chemical affinity in our two first experiments, have been disengaged again in this experiment by the same agency, but quite indirectly.

Observe the further effects of the current. This funnel-shaped vessel contains water slightly acidulated with sulphuric acid. At the bottom you observe two pieces of platinum foil connected with these two wires outside the vessel. Over each foil is inverted a tube full of the same water. Please note what takes place when I touch the wires connected with the foils by the extremities of these wires connected with the terminals of the battery. The tubes are being rapidly filled with gas, bubbling from the surfaces of the platinum foils, and you see the proportion of the gases in the tubes, one of them is being filled much more rapidly than the other. These gases are the hydrogen and the oxygen of the water in the vessel. In other words we have here effected the decomposition of water by the same agency which had deflected the magnetic needle, and heated the platinum wire.

The electric current has another most remarkable property and that is the production of magnetism. You have seen how it can act upon a magnet; it has a similar action upon currents like itself. Currents are found to attract each other if they are flowing in contrary directions; and currents are acted upon by magnets exactly as magnets are by each other. Here in this arrangement you see a coil of copper wire freely suspended and capable of receiving a current. I hold in my hand a magnet, either pole of which presented to either extremity of this copper coil, does not show the least effect, but the moment I pass the current through the coil, it acquires the remarkable property of polarity,

whereby it assumes the position that a freely suspended magnet does, one extremity pointing north and the other south, and these extremities being attracted and repelled by the south and north poles of the magnet respectively.

Thus then, the copper wire, connecting the two metals in the arrangement I spoke of in the beginning, has acquired, by the fact of chemical affinity being brought into play in the vessel, the property of acting on a magnetic needle in a peculiar way, of producing heat and light, of decomposing compound substances, and of inducing states similar to that which resides in the magnet. Let us see if the various other forces thus developed can be made to produce electricity and its phenomena.

Let us take *Heat* first, and see whether like the electric current it has any action upon the magnetic needle. I told you in the beginning that our conception of force is derived from, and hence our very definition of it is based upon, the ability to produce motion. In the case of heat as a force, this is manifest even to the most unreflecting. Of all agencies that come easily within the cognizance of man, heat is found to produce motion in a great variety of ways, and this property depends upon the primary one of increasing the distance between the molecules and atoms of matter, that is, of destroying the force of cohesion, and of thereby causing expansion of bodies. You know how advantage has been taken of this property to measure the quantity or rather the relative intensities of heat in the construction of the thermometer, mercurial and other.

You see in this simple apparatus, originally devised by Seebeck of Berlin, there are two plates of dissimilar metals, copper and zinc, soldered together at their extremities, and forming a quadrilateral figure of which the three sides are formed by the copper. A magnetic needle is placed in the open space between the plates of zinc and copper. The needle, as you see, is quite at rest, but I disturb that rest by applying the flame of this spirit lamp to one of the soldered extremities. The needle turns exactly as it would under the action of an electric current, as you saw before. If the flame be applied to the other extremity, the needle turns, but in the opposite direction. Similar effects are produced by the *abstraction* of heat from the extremities, as I do now by the application of ice, opposite to those produced by the

increase of heat. Just as the simple electric cell has been multiplied into a battery, so this simple apparatus of Seebeck has been very ingeniously multiplied and arranged so as to render it a very sensitive instrument for the appreciation of temperature inappreciable by our most delicate thermometers. Here is such an arrangement (Melloni's thermo-pile), and you see how even the warmth of my finger is felt by the galvanometer there in connection with this apparatus. Regular thermo-electric batteries have been constructed whereby all the effects of electricity could be produced, namely, the decomposition of water, the production of magnetism, and even the production of red heat.

We now come to the magnet, and let us see whether we can make it produce the electric current. Round this cylinder of wood is coiled a good length of copper wire, the extremities of which may be brought into connection with the ends of the galvanometer coil, and which I do now. I hold in my hand a magnet, and please watch the behaviour of the needle just as I introduce the magnet into the hollow of the cylinder. You see there is a deflection of the needle, but it comes to a state of rest and remains so if I keep the magnet within the hollow of the coil, and as long as I keep it there. Now I withdraw the magnet, and instantaneously there is a deflection of the needle but in opposite direction to what there was when I had introduced the magnet. Thus there are currents generated in the coil of copper wire by the simple introduction and withdrawal of the magnet into and from its hollow, but these currents, as you saw, were but momentary. Advantage has been taken of this discovery to construct what are called magneto-electric machines by converting the interrupted into continuous currents by the aid of certain ingenious mechanical arrangements. This machine (Wilde's magneto-electric machine), that you observe here, is one of such devices, and you see how all the effects of electricity can be produced without the disadvantages of the battery. By simply turning this wheel I can, as you observe, heat this platinum wire to red heat and white heat, and decompose water.

Thus then, gentlemen you see, from the few experiments I have hastily performed,* how one of the forces of nature can

* Preparations had been made for other experiments, but they were omitted to bring the Lecture rapidly to a close, in order to relieve the audience from

be made to produce the phenomena of the others. It is usual to say that these forces are identical. But in my humble opinion Science would not be justified in making that sweeping assertion. All that we can say is, that by modifying the conditions of development of the one, we can produce phenomena similar to those of the others.

You will have also observed from the experiments how the discoveries of science are naturally, necessarily, and inevitably followed by applications which are useful to mankind.

Before I conclude I have one duty to perform, and that is to thank you Gentlemen most cordially for the honor you have done me by your presence.

To you European gentlemen, and I hope you will permit me to call you by the endearing name of brethren, to you I owe thanks because, in this my endeavour to found a Science Association, I have only followed your noble example. And to you men of science in particular, I owe thanks in anticipation, because this infant Institution will have to depend upon your friendly and kindly aid for its actual work which is commenced to-day, and I trust you will not grudge us that aid in this our child's effort to learn the alphabet of science.

To you my countrymen I owe thanks, for without your munificent contributions in its aid even the idea of a science association could not have been entertained. I have however to beg of you to remember that large, and in some instances, princely as have been your donations, they ought to be larger and more princely still. I would beg of you to remember what that distinguished savant, our just pride, Dr. Rajendralala Mitra said at the third meeting of Subscribers to this Association, that for every thousand we have we want a lac. And I would beg leave to remind you in the words of Scott Russel, one of the most earnest advocates of thorough scientific and technical teaching in England, that "parsimony in education is waste of the worst kind,—it is the waste of human beings."

To you Babu Kristo Dass* I owe thanks for the friendly care with which you nursed the scheme, and I feel it my duty here to

the inconveniences and discomforts of breathing in over-crowded rooms,—the hall, the passages and the adjoining rooms having become filled to overflowing.

* The Hon'ble Kristo Dass Pal, Editor of the *Hindoo Patriot*.

declare publicly that without that friendly and patriotic nursing the scheme would have died the death of a premature birth, at least, would never have attained shape and dimensions enough to attract public sympathy and support. And I must also take this opportunity to return my sincere thanks to the Press of India for their unanimous and powerful advocacy of the project.

To you Rev. Father* and friend, I owe thanks for the encouragement you have given me from the very beginning, and which encouragement has hitherto kept me up in the face of the most formidable difficulties and the most trying troubles. You opened your public lectures purely for the purpose of keeping up the idea of the Science Association afloat in the public mind, and of educating the rising generation of Bengal to an appreciation of the worth and importance of the Physical Sciences.

And to you Hon'ble Sir, how can I adequately and even decently convey the thanks that I owe you. Words fail me at the present moment to do the behests of the heart. Your Honor has laid me, a poor obscure practitioner of medicine and of a system yet despised of orthodoxy,—I say Your Honor has laid me and all my countrymen under a debt of obligation which it is impossible for us now to repay, and which will only have been partially repaid when the Institution, which has been founded under your auspices, and which to-day under your direction commences actual work, will prove a success.

And then I have no doubt the name of Sir Richard Temple will be cherished in the hearts of my countrymen as the Father of Scientific Education in Bengal.

It was the boast of Count Rumford, the founder of the Royal Institution of London, that his greatest discovery was the discovery of Davy, and Davy in his turn boasted that the greatest of *his* discoveries was the discovery of Faraday.

Sir, I do not despair of such discoveries even here in the future, though that future must be very remote indeed. I have not lost faith in the intelligence of my countrymen. It is only through centuries of misrule and despotism and foreign domination that they have well nigh ceased to be intellectual. Once the intellectuality is roused, and the Science Association is

eminently calculated to do it, the intelligence will come into play and produce its fruits.

The lecture being concluded,

Dr. RAJENDRALALA MITRA said, he believed he would be giving expression to the feelings of all present when he proposed a vote of thanks to Dr. Mahendra Lal Sircar, who had labored long and zealously, and devoted so much of his time to the establishment of this Association. It was true that it had been to him, in a great measure, a labor of love, but it should be borne in mind that the labor was the means of establishing one of the most effective and valuable institutions for the amelioration and well-being of the Hindu race (cheers). Nothing could be of greater importance, or of greater advantage, than a knowledge of the Natural Sciences, for, if you deprived a nation of scientific knowledge, it sank into utter insignificance. One might fancy what England would be without her scientific men—of such men as Thomson and Faraday and Sir Humphrey Davy—what would she be, compared with France? It was the highest honor to intellect, to be able to command Nature, and to acquire a mastery over Science was mastery over Nature. It had been aptly remarked that, in India, civilization succumbed to Nature; while, in Europe, it surmounted Nature. Here, for instance, the people sank under thunder and lightning, because they felt it was something over which they had no control; but, in Europe, they endeavoured to find out how to subdue it, and make it subservient to their own ends and they achieved a great success. They also discovered how mighty machinery might be propelled with the aid of steam, a power unknown, and if known, deemed worthless in this and other countries. The advantages of steam had already been discovered and utilized, and, in the same way, it was expected that, before long, magnetism would be made to propel ships, and supply in some measure the place of steam. Now, if a proper use of the forces of nature were studied in this country, it would not only be advantageous in the cause of Science, but advantageous to the people at large; and it was therefore that Dr. Sircar wished so to train the minds of students as to adapt them for knowledge of this description. Such a noble object—the attainment of the highest knowledge—was surely worthy of their best thanks, and he did not doubt but that they would

freely give those thanks to Dr. Sircar, for his unremitting zeal and assiduity in this cause (cheers).

Reverend FATHER LAFONT said that, in rising to second the vote of thanks proposed by Dr. Rajendralala Mitra to the able lecturer, he felt great joy in the doing so on the occasion of the realisation of the dream of his friend, Dr. Sircar. For a long time, it had been threatening to be a mere dream, and he, therefore, hailed with joy what was now a reality, namely, the establishment of a Native Indian Science Association. He would not detain them long on a topic on which they had been so often addressed during the past six years—the usefulness of the study of the Natural Sciences. It had been described, in better language than any he could employ, by Professor Tyndall, in his last lecture on Light, before leaving America. Tyndall reminded them that there were not, as was commonly supposed, two kinds of Science—Theoretical Science and Practical Science. There was but one Science, and Theoretical Science was applied to different uses in life. There were three classes of workers in studies of this description. One class was composed of those who investigated Science for pure pleasure only; and these had their own reward, in that they knew Nature better than the rest of their fellow-creatures, and were really kings of Nature, as men should be. The second class of workers were in a more humble sphere. These were contented to learn from the first what the first had already realised, and they made it their duty to impart their knowledge to others by means of lectures. These, though humble, had great merit, because, by their labor, they diffused among the masses such knowledge and information as they would not otherwise have obtained. Then there was the third class, which was wrongly called the only useful one. It was composed of those who, having learnt from the first and second, applied their knowledge to practical purposes. But there could not be only one class wholly composed of such persons. Some others must be allowed to diffuse the knowledge among a host of workers; and it was for this purpose that Dr. Sircar had, by indefatigable efforts, succeeded in establishing this Institution (cheers). He (the speaker), however, could not very well separate from the vote of thanks the name of their Honorable President, who had condescended to come amongst them, and take a pro-

minent part in the proceedings of the day. He, therefore, hoped they would with acclamation offer a vote of thanks to His Honor the Lieutenant-Governor (loud and continued cheering), who had done so much to further the end in view, and who, Father Lafont was in a position to say, was chiefly instrumental in having the Science Association opened that evening (cheers).

Babu KESHUB CHANDRA SEN then addressed the meeting. He said he craved His Honor's permission to support the Resolution which had been so ably moved and seconded. He heartily joined those present in according the warmest thanks of the meeting to Dr. Mahendra Lal Sircar for his very interesting lecture, and in congratulating him on the inauguration of his Science Association. The Native community certainly owed him a "debt immense of endless gratitude." He must confess that he had always cherished serious misgivings and doubts as to the success of the undertaking, and it had certainly seemed to him, at one time, a somewhat ambitious and impracticable scheme, beset with formidable difficulties. That the founder of the Association had at last succeeded in carrying an enterprise of such magnitude to a successful issue, was all the more creditable. There were three things, he believed, to which this remarkable success was attributable. The enthusiasm, he might say, the unconquerable enthusiasm, and sustained energy of a single devoted votary of Science—he meant Dr. Mahendra Lal Sircar; the princely liberality of his leading countrymen, chiefly of Bengal; and, above all, the valuable and timely aid vouchsafed by His Honor the Lieutenant-Governor of Bengal (cheers). Not being a thick and thin advocate of utilitarianism, he did not feel disposed to take an utilitarian view of the benefits of Science; and, though he rejoiced with the rest to see this Association opened to-day, he did not rejoice because it might indirectly prove the means of giving the country wealth and material prosperity in abundance, and helping the expansion of its physical resources. That the cultivation of Science was sure to lead eventually to such practical and beneficial results, few would deny. But apart from such advantages, there was value in Science itself, and it must be honored and pursued for its own sake. Science, no doubt, conduced to the wealth of nations, and the prosperity and happiness of individuals; but it

also afforded the best discipline to the mind, and the highest recreation and pleasure to the intellect, as the experiments they had witnessed, testified. It was to be hoped that, in this Association, Science would be cultivated for its own sake, and that his youthful countrymen would learn here to find, in the high truths of Science and its pleasures, the reward of their toil. He earnestly trusted that the Association would live to grow in strength and usefulness under His Honor's fostering care, and the zealous co-operation of European and Native gentlemen interested in Science (cheers).

SIR RICHARD TEMPLE, who, on rising, was loudly cheered, said that he supposed, on this occasion, he was expected to close the proceedings with a few remarks. He believed his numerous listeners, whom he saw crowding the several doors of the hall, were the young men belonging to the various Educational Institutions—young men who were anxious to see whether they would be able to earn a living by the study of the Practical Sciences. He hoped it was with this practical and sensible object in view that they had come there, and that they would hear all that was said to-day. It would, therefore, be to the youth of the rising generation that he would address his remarks. It would hardly be necessary to address the educated European and Native gentlemen who were assembled; but it would be as well for him to say a few words to the young men who would have to work their way in the world, just as he himself and others had to do. He would first congratulate Dr. Mahendra Lal Sircar on the thorough realisation of his dream. He had got a good house; a large sum in the way of subscriptions had already been paid, and a considerable sum had also been promised; so that there were substantial grounds on which they could base their expectations of success. Now, to the young men of the rising generation he would say that, just a year ago, he had caused a letter to be addressed to Dr. Mahendra Lal Sircar on the subject of this Institution, from which he would on the present occasion, read an extract:—

“The Government, indeed, sympathizes with any aspirations which the natives may have in this respect, and will itself do what it can in this direction. Better and more efficacious still, however, will be the exertions which educated native gentlemen,

like yourself and others, may put forth of their own free will for the improvement of their countrymen in scientific knowledge.

Science may be pursued for its own sake in the abstract, and for the mental pleasure it affords, and such pursuit is most laudable. There, doubtless, are many native gentlemen in Bengal who will thus pursue it.

But science also may be made to add immeasurably to the national wealth, and so to afford lucrative employment to numberless persons, according to their qualifications and acquirements. The field, which thus seems to open itself in Bengal, ought to give encouragement to every Bengalee who is anxious to earn his own livelihood. When we reflect upon the demand which is springing up in all parts of Bengal for land surveyors, for civil engineers, for trained mechanics, for mining engineers, for geological surveyors, for veterinary practitioners, for practical botanists, for foresters, for gardeners of a superior description, for persons versed in scientific agriculture, for engravers, for lithographers, for carvers in wood and stone, for architects, for medical men, for practical chemists, and for many other sorts of men possessing scientific and artistic culture, we see what a favorable vista is beginning to display itself before the rising generation, at least in this part of the country. The more such persons increase in numbers and abilities, the more will the resources of the country grow, and the more will employment expand. Thus one cause will react upon the others. The fact of trained men being available on the spot will render enterprise profitable; and the success of such undertakings will cause occupation to offer itself to those who seek it.

Moreover, by these means not only will many new industries be introduced into Bengal, but almost every one of the old established arts and manufactures of the country may be rendered more useful and remunerative than at present.

It is probable that our educated youths will betake themselves more and more to such pursuits when they see fully, what they already are beginning to perceive, that the two principal of the existing professions, namely, the public service and the bar, are fast becoming over-stocked. Let any one calculate on the one hand the rising numbers of highly educated young men who are yearly issuing forth from our colleges and schools—and on the

other hand, the comparatively small number to whom the public service and the bar can at least supply the means of livelihood, and he will observe at once that the young Bengalees, who are coming forward year by year, must search for other walks of life, wherein to exercise their talents and industry. The Lieutenant-Governor hopes that they will turn by degrees at first, and afterwards rapidly, towards the other and varied pursuits indicated above.

Now it is for the encouragement of scientific pursuits among your own countrymen, that the Lieutenant-Governor understands your society to be instituted. However much the Government itself may move in the same direction, there is more than enough room for a co-operative movement by the natives for this object. Such a movement on your part will be the more powerful in its moral effect, if it be advanced to a successful result, by your own efforts alone, without any help from Government.

However much the Government may sympathise with your views generally, your work will have all the more vitality and abiding reality, if its details be settled by yourselves without any specific guidance from the State.

From what the Lieutenant-Governor has seen (greatly to his satisfaction) of yourself and of several of your supporters, he has every confidence that you will be able to elaborate plans calculated to redound to the material benefit of your countrymen, for whose welfare you feel a justly patriotic regard."

Now, these were the ultimate objects which this Institution was destined to subserve. If the young men thought for a moment on the various capacities to which, in the letter in question, they were invited to turn their attention, they would find that they were not imaginary. They would see that there were various occupations which were beginning to present themselves to their view. Factories, both cotton and jute, were springing up on both sides of the river, and their chimneys were so numerous that they looked like the trunks of a forest of trees. To botany and botanical pursuits they could also turn their attention, and then there were the coal mines and the new fields of iron. Such being the inducements before them, they might look forward, before long, to the establishment of technical schools and colleges, where the youth of this country would receive a scientific

training. As His Honor understood the object of the promoters of this Institution, it was not so much intended that it should be a school or college, but an educational home where those natives who had a taste for the sciences might have an opportunity of continuously studying them till they attained a degree of proficiency and efficiency. For training of this description, his excellent friend, Mahendra Lal Sircar, was peculiarly qualified. Lectures would be delivered by others also, and if one were to judge from what was to be seen to-day, those lectures would be numerously attended. He would conclude by observing that as the success of an institution like this greatly depended on the excellence of the lectures delivered, and as there were in this Presidency a large number of scientific gentlemen, both European and native, he hoped they would give the Institution their assistance and advice. And if all the young men put their shoulders to the wheel, and exerted themselves in the cause of science, he did not doubt that they would in time accomplish the objects for which the Institution was begun to-day (applause).

The vote of thanks to Dr. Sircar was then put, and carried unanimously.

Raja HARENDRA KRISHNA, Bahadur, seconded the vote of thanks to His Honor the Lieutenant-Governor, which was carried by acclamation.

The meeting then came to a close.

FURTHER CONSIDERATIONS ON THE NECESSITY, FOR A HOMŒOPATHIC HOSPITAL AND DISPENSARY IN CALCUTTA.

"Come and See."

A most interesting and pleasant anecdote comes up before us just at this moment, when we are reflecting upon our article in our last number on the "Necessity for a Homœopathic Hospital and Dispensary in Calcutta," and the criticism or rather feeling that it has evoked in the bosoms of an apparent opponent and of a declared advocate of Homœopathy. It is now a good many years that we paid a visit to the studio of one who was distinguished alike for faithful painting as for very successful photography. He had the kindness to show us his performances, and they included photographs and paintings. What struck us as singular was that while he freely spoke about the excellence of some of his photographs, he was quite reticent about the merit of his paintings. We perceived the reason, but still to hear from him *his* reasons, we asked, and found that they were what we had anticipated, and in fact what should be. He answered that he had no hesitation in speaking of the merits of his photographs because that depended chiefly upon Nature and upon the instruments he had employed, particularly the superior quality of the Lens of the Camera, whereas if there was any merit in the paintings they were entirely due to him, and no man should sound his own praise.

The same with homœopathy. Whatever benefits patients derive from that system of treatment are so entirely due to the excellence and superiority of the system itself, and so little to the skill of the physician who administers it, that we think it ought to be the duty of all who practise it to give as much publicity as possible to the results obtained under the system. And the duty is all the more imperative when we consider the present attitude of the dominant branch of the profession towards homœopathy. Not to do it would be to withhold the knowledge of a life-giving truth from the world.

It was under such a sense of duty that we penned in our last number the article in question, basing our arguments for the "necessity" on the statistics of *attendance* at our own humble Out-door Dispensary, and little did we think that the truth of those statistics would be questioned, and far less did we even dream that any one would have the goodness to insinuate that we must have actually manufactured the figures that we gave simply for the purpose of self-glorification.

But so it has been. Up to going to press there have appeared two correspondents in the *Indian Daily News*, one under the

anonym of "self-glorification," and the other in the name of L. Salzer, M. D., one attempting by mathematical calculation to show the impossibility of so many as 113 patients being treated every morning, and the far greater impossibility of three-fourths of that number being benefited by homœopathic treatment, and the other, following suite, and as if in concert, brings in the statistics of the London Homœopathic Hospital, leaving the reader to draw identical conclusions which, as he thinks, ought to flow from analogy, and thus under the pretence of saving the reputation of Homœopathic statistics in general, manages to stab a brother practitioner by questioning his veracity.*

The only reply we have for these inuendos is to ask the kind gentlemen who have made them to "come and see." The Dispensary is open every morning, and any one is welcome to watch its proceedings. We wish, nay, we pray, that any one who has the interests of humanity at heart, we do not say of homœopathy or of science, should pay an occasional visit to the Dispensary. And then they will "see" whether 113 patients on an average are or are not actually attended to and prescribed for and supplied with medicines every morning. And then they will see the difficulties under which we labor, which difficulties are in the way of the progress of homœopathy, and to remove which difficulties it was, and not for self-glorification, that we ventured to suggest the necessity of a Homœopathic Hospital and Dispensary in Calcutta. The establishment of a Homœopathic Hospital would be suicidal to our self-glorification, inasmuch as it would prevent us from publishing, or rather as "self-glorification by broadly hinted doubt and L. Salzer, M. D. by implication would have it, of manufacturing statistics to our glory.

We know, especially from the light of homœopathy, what amount of care and attention, in other words what amount of time, is necessary for the examination of patients. Not only five minutes, but five hours, and even as many days, are in some cases not sufficient to enable the physician to arrive at a correct diagnosis of the disease and a right selection of the remedy. Such cases do present themselves, and we do devote as much time as we possibly can to attend to them, not indeed continuously which is impossible under any circumstance and not needful even for the interests of the patients; but dividedly which is both economical and beneficial. The ordinary run of cases does not require much time to examine and prescribe for. He who has had any experience

* We had a third, after the appearance of L. Salzer, M. D.'s letter, to send a reply to the *News*, but we were deterred from doing so on being told by a generous-hearted European gentleman, that his correspondence, in reply to the insinuations of "Self-glorification," based upon what he had actually seen of our Out-Door Dispensary, was suppressed by the fair and "deservedly" Editor, though subsequently L. Salzer, M. D.'s letter containing insinuations was at once published.

of Dispensary practice knows this, and it is either sheer ignorance or malice which deems or insinuates that at least five minutes are invariably necessary for every case. If "Self-glorification" had the slightest regard for truth, "the whole truth, and nothing but the truth," which he so exultingly preaches, he would have made the necessary distinction between old and new cases, and instead of basing his arguments upon the short summary given by the *Hindoo Patriot*, he should have turned to the number itself of the *Journal* where the statistics are given in detail,* and then he would have seen that the number 118 which he found out to be, and which we ourselves gave as, the average of daily patients treated in the Dispensary in 1875, represented not only new, but both new and old patients. And then, if he had any fairness in him, he would have seen that his estimate of five minutes a patient was too wide of the mark; and then probably he would have paused and considered before indulging in insinuations as he has done. For, old patients, presenting themselves and reporting improvement, require only to be dittoed, and not subjected to mock examination to satisfy idle curiosity or attract the applause of by-standers.

L. Salzer, M. D. has overlooked, or, as we suspect, has chosen to overlook the same distinction between old and new cases. For when he attempts to throw doubts upon the veracity of our figures by pointing out the incredibly vast difference between the number of out-patients treated at the Homœopathic Hospital in London, attended by ten physicians and surgeons, and the number treated at the puny out-door Dispensary in Calcutta, he forgets that the former number as given in the Homœopathic Directory for 1874 represents only new cases, whereas the latter number as given by ourselves represents, as we have said above, and as will be seen from the foot-note given below, both new and old cases. If he would please refer to the last issue of the *Journal* he will find that the number of new admissions in the Dispensary was 10,516. True, that even this number shows a difference much in favor of the Calcutta Dispensary. But it must be remembered that the admissions in the Calcutta

* Starting from 1869 since when homœopathic treatment was exclusively followed in treating patients coming to me for advice,

The daily average of cases treated were—

New	Old	All	for	1869
4.9	1870
5.8	1871
11.4	1872
16.9	...	62.34	...	1873
23.7	...	76.14	...	1874
23.23	...	76.45	...	1875
23.50	...	84.68	...	1875

—Calcutta Journal of Medicine, July 1876.

Dispensary are unrestricted, any one presenting himself at the usual morning hour, and even at any other hour, whenever we are in fact at home, being admitted and prescribed for, whereas the admissions in London, as will be seen from the Directory to which he refers, are restricted by many conditions. In London the Homœopathic Hospital and Dispensary is not the only place where homœopathic treatment may be had free. In London again there is a much larger number of homœopathic practitioners so as to render homœopathic advice infinitely more easily available than in Calcutta. And in London perhaps people do not resort to *gratuitous* medical aid so freely as in Calcutta.

Our readers will please note that the tables that we published, compiled from the case-books and registers, had reference only to the *number* of patients that attended the Dispensary, classified according to nationality, age, and sex; and that we did not venture to draw any *definite* statistical conclusion from them. All that we said was that at least three-fourths of the number that attended were *benefited* by the medicines they received, and this we were justified in saying from the regular observation of the *old* patients that presented themselves. We are aware that out-patients do form an unstable element in the statistics of a Dispensary, and it was gratuitous to suppose that we did not make the necessary allowance for that instability. The regularity with which the majority (we do not say all) of our old patients present themselves is remarkable, and it is this stability which enabled us to make the assertion that we did respecting the proportion that are benefited.

A glance at the Tables published in our last, and in the double number for January and February 1874, will show that the Dispensary has grown from very small beginnings. The Dispensary itself was not, properly speaking, a voluntary creation of ours. It was the inevitable result of a practice followed by all Hindu practitioners from time immemorial, a practice that has the prescription of a sacred institution, to depart from which is deemed inhuman on the part of the physician,—the practice, namely, of giving gratuitous medical aid to all who resort to the physician's house for such aid. In spite of their English education, which seems to have, at least, hitherto, exercised a deleterious influence upon all personal sympathies, the native practitioners of European medicine have, it must be said to their credit, followed this humane custom, and every morning the gratifying spectacle is presented at the house of every practitioner of his cheerfully rendering medical aid to all sufferers who only take the trouble of calling upon him. Indeed every practitioner has a little out-door charity at his house, and

we were no exception before we were privileged to be acquainted with homœopathy ; and if, since we felt it our duty to adopt this benign system in our treatment of cases, the little charity has grown to the dimensions it has now attained, threatening to absorb so much of our time as to be detrimental to our very living, it is because of the immeasurable superiority of the new over the old system, and not because of any superiority in our skill, which we have never been guilty of even thinking to claim.

We deem it due to ourselves to put before our readers and the public at large what we said when we first published the statistics of attendance at our Dispensary in 1874 :

“ They (the tables) unmistakably point to the progress homœopathy has already made and is making. Indeed the limit to the number of patients is only prescribed by the limit of the time that we can devote to this object. Already the encroachment upon our time is serious enough to affect our private practice. The morning is the time when people want the attendance of their doctors, and it is the entire morning that is engrossed in the work of the Dispensary. Nevertheless we have been going on with the work without any patronage, or expectation of any patronage, from out-side, and we intend to go on with it, whatever the pecuniary consequences to us personally may be, for the sake of the life-giving truth which Hahnemann had the privilege of bringing to light, and which it is the duty of all, who have the privilege of appreciating it, to be the humble instruments of bringing within reach of every suffering fellow-creature.

“ It has been represented to us that by thus giving gratuitous medical aid systematically every morning, we not only injure ourselves but likewise the profession. For, it has been argued that at least a part of the number of patients, who avail themselves of this gratuitous aid, would, but for it, have paid for it, and thus so much money is withdrawn from the profession. We readily admit this to its fullest extent, and we do not even deny that such charities are liable to unpardonable abuses. In fact we feel we are often made the victims of this abuse. We see that a considerable portion of our out-door patients can pay for the advice and medicine they receive, and still they do not. We nevertheless continue the practice on the principle that better far that the rich should abuse the charity, than that the poor, the really needy, should suffer from want of it. And the principle has peculiar force in the case of homœopathy. For strange to say, while homœopathy has charitable hospitals and dispensaries in the North-West, it is still in lack of these in Bengal and in the Metropolis. We publish the following tables, not for the purpose of writing our own eulogies, but simply to show that, how-

ever misrepresented by Orthodoxy and consequently unrecognized by Government, homœopathy is being largely appreciated and recognized by the people, and that, therefore, at least one homœopathic institution, combining in itself a hospital and a dispensary, has become a necessity, and must be allowed to have, with other hospitals and dispensaries, equal claims upon the patronage of the State and the public, for its foundation and support. However willing a single individual may be to meet the necessity to the best of his means and opportunities, it must be admitted that it is really hard for that individual to bear upon his shoulders the burden of the many. Besides, however steadily the work might have been done in the past, nevertheless when it has to depend upon one individual, it has to a large extent to depend upon haphazard and chance, and such work should not be allowed to depend upon chance and haphazard."

We ask whether with our conviction of the truth of homœopathy, and in view of its being under the ban of orthodoxy, shut out from all official positions and even excluded from professional communion, with the result of the patient-world being deprived of its inestimable blessings,—we ask whether, under such circumstances as these, we would have been justified in doing otherwise than what we have done? Truth is living and vitalizing. A conviction of truth impels the mind to make it known, especially when it is pregnant with advantage to the world. And it is the height of perversity to attribute motives of self-glorification to minds so impelled and so actuated. There would be an end to all progress if such were the verdict of the world, and if all men were to bow down to such verdict.

Acknowledgment.

Through inadvertence we had omitted to acknowledge in our last, which we now do with thanks, the following very valuable works of the Nestor of Homœopathy in the present day. We shall take an early opportunity to notice them.

Analytical Therapeutics. By C. Hering. Vol. I. Boericke and Tafel. New York and Philadelphia. 1875.

C. Hering's *Materia Medica with a Pathological Index.* Vol. I. New York and Philadelphia. Boericke and Tafel. 1875.

CLINICAL RECORD.

A Case of Acute Tonsillitis. Cured by Baryta Carb.

UNDER CARE OF AN L. M. S.

A Mahomedan boy named Maizaddin, aged 14, resident of Nárkal-dángá, caught the disease while coming from his native village by boat through the Bádá or Salt Lake. The symptoms, which characterized his disease while in the boat, were ardent fever and swelling with pain in his throat. A few days before this he had an attack of mild Intermittent fever which had gone off of itself without any treatment. The day after he arrived at his residence named above, his sufferings grew worse, and I was called in consultation by a fifth year medical student about the latter end of July (I do not remember the date exactly). The case presented the following symptoms when I saw him :—

Fever very high, preceded by shivering ; considerable swelling outside the throat ; great difficulty in respiration and deglutition ; throbbing and lancinating pain in the tonsils specially the left ; a darting pain from the throat to the ear ; on examination, the left tonsil was found to be very much enlarged, about the size of a hen's egg, the right one also enlarged ; the left one presented a deeply congested shiny-looking appearance ; there was some swelling and dull redness of the uvula, of the soft palate, and of the posterior portion of the hard palate. These parts were covered here and there with ulcers. I prescribed *Baryta Carbonica* 6, every 3 hours, and a cotton wool bandage around the throat. The inflammation began to subside that very night, so that on the following morning (as I learned from the report of the medical student) there was much relief of pain, reduction in the swelling, subsidence of redness, and there was no difficulty in deglutition nor in respiration. The medicine was continued for about four days, and the patient made a good recovery.

Remarks.

This case demonstrates the remarkable influence of *Baryta Carbonica* over parenchymatous inflammations of the Tonsils.

. *A Case of Sinus in the breast and Caries of the 2nd rib and Sternum. Cured by Calcareo Carbonica.*

UNDER THE SAME.

A Hindu lady, aged 20, an inhabitant of Krishnanagar, had an abscess in the right mammary gland during her last confinement about 22 months ago. The abscess was allowed to burst of itself, and all the reputed native medicines applied to cure the resulting ulcer. Finding that the ulcer would not heal, and some sinuses (more than two) formed, she placed herself under an Assistant Surgeon, at Goari, who treated her for some months without any benefit, the sinuses increased in number (being more than 4), the breaking out of two of which, one over the sternum, another over the 2nd rib, made the doctor think of and advise excision of the breast. Being alarmed, the patient was brought down by her husband to Calcutta. Here too, the European Surgeons, whom she consulted, advised excision (probably not minding of the caries of the bones that existed). However, the patient placed herself under Homœopathic treatment, and I prescribed *Sil* 12, 12th July 1875. The medicine was continued for upwards of a month, without almost any benefit, the quantity of discharge, its increase at every full and new moon, fever during the same period, and excessive pain remaining the same as before. The secretion of milk was very profuse in the affected breast, and more so during the above-mentioned periods. *Phosphorus*, *Sulphur*, *Conium* and *Graphites* were also used without giving any relief. The only medicine which did any good was *Phos.* 6, which altered the quality of the discharge from watery and corrosive to thick and laudable pus. It also diminished the quantity to a certain extent, and there was no fever after its use. I then prescribed *Calc. C.* 12, thrice daily. After using the medicine for a week, she improved much, the pain disappeared, discharge became scanty, and the secretion of milk diminished. The medicine was continued for a month more, and she recovered perfectly. All the sinuses closed, each having a cup-shaped cicatrix; she went home on the 28th Oct. 1875. It is a year since, and she is quite well.

Gleanings from Contemporary Literature.

A STUDY ON PHOSPHORUS.

By S. L.

A CASE OF ACUTE PHOSPHOR. POISONING, BY DR. MERING.

Miss D., 22 years old, took, July 10th, at 8 A.M., a cup of milk, in which she dissolved the phosphorus of a box of matches. She felt well till noon, when intense vomiting set in, continuing till the next morning. On the 11th, she suffered from diarrhoea, headache, debility, and severe burning in the epigastric region.

July 12th. She was admitted in the hospital.

July 13th. Status præsens: a strong woman, of middle size, well developed, and with good panniculus adiposus. Conjunctivæ very yellow, whereas the evening before the icteric color was not yet so clearly defined. Face full, intensely red. Temperature hardly increased according to sensation; neither cedemata nor exanthemata; pulse regular, soft, not tense, quite narrow (yesterday very slow); to-day, far quicker, 120. No dyspnoea. Temperature 38.1.

Patient perfectly conscious; complains of severe thirst, headache, pains in epigastrium, and præcordial anguish. She is restless, and throws herself about in her bed. Lips and visible mucous membranes not very red. Tongue moist, with a white coating: papillæ intensely red, and slightly prominent. Nothing particular on pharynx. Headache all over the head; no point on the skull particularly sensitive to pressure. Thorax well formed, type of respiration costo-abdominal. Thorax expands moderately during breathing. Slight rhythmical pulsations in the cervical veins. Percussion-sound in front very full, loud, on both sides equal; auscultation reveals soft vesicular inspirium, and uncertain expirium. On the back, over the lungs, on the left side, begins a dullness at the seventh rib; above that dullness still a clear, but very weak vesicular breathing; fremitus somewhat diminished. When breathing deeply the niveau of the dullness changes for one intercostal space. Posteriorly left the pulmonary sound reaches to the tenth dorsal vertebra.

The dull sound of the heart greatly extended in breadth, passes over the right sternal edge, goes upwards to the middle of the second intercostal space, reaches on the left side not quite the mammillary line. Beat of the apex in the parasternal line in the fourth intercostal space. Sounds of the heart clear and very strong; only over the aorta both sounds of the heart rather dim. Systolic sound all over more clear than the diastolic one.

The dullness of the liver greatly enlarged. Its upper margin lies at the upper rim of the fifth rib, the lower one reaches down to the umbilicus; towards the left the left lobe passes over into the dull sound of the heart. Liver palpable, of moderately firm consistence. Epigastrium bloated up, very sensitive to pressure, especially to the right of the sternal line; the palpation of the right lobe of the liver is also somewhat painful. Ileo-cæcal region dull, all elsewhere tympanitic sound. Spleen does not seem to be enlarged, nor is it palpable. Uterus does not reach over the symphysis; internal examination reveals uterus freely movable; vagina free; very little ante-flexion inside of the normal limit; os uteri not open; no sputum, no stool. Urine 1400 Ccm., reddish-yellow, somewhat murky, acid, sp. gr. 1016, contains neither albumen nor sugar, and shows no reaction on the coloring matter of the bile.

Ordered small pieces of ice, ice-bladder. R. Ol. terobinth., *Æth. sulf.* \mathfrak{ss} . MDS. Ten drops every three hours.

Evening. Temperature 38.1, pulse 108. Posterior part of the eye normal.

July 14th. Enormous change. She lies with closed eyes; speaks incoherently, and grasps at anything that comes near to her. Extremities cool, chest and abdomen not very warm. Temperature 36.9, pulse 96. Redness of the face nearly gone, giving place to a decidedly yellowish paleness. Chest and abdomen icteric. When asked, patient shows her tongue, but neglects to put it back, although requested several times to do it. Sensorium very obtuse, but she does not complain of headache. Dulness of the liver to-day smaller than yesterday; the upper margin begins at the lower edge of the fifth rib, the lower margin unchanged. Pressure on the epigastrium very sensitive, also on the right lobe of the liver. Enlargement of spleen not perceivable. Dulness of the right heart increased. Sounds of the heart clear and strong. Abdomen not painful; every where tympanitic sound. Pulse can hardly be felt, very little tense, very small and low. No *œdema*. She vomited in the morning a quantity of brownish fluid, but no blood. No stool. Urine 1200 Cc., acid, clear, dark-yellow, no reaction of biliary coloring-matter. The vomited matter was free from blood, contained a great many drops of fat; in one place magnesium and ammonium phosphate was found. She did not eat any fatty substances yesterday. An examination of the blood showed nothing abnormal, only the colorless blood-corpuscles were somewhat increased in quantity.

Evening. Temperature 36.4. No pulse.

July 15th. Towards noon yesterday, copious black-brown bloody vomiting. The apathy kept on till 5 P. M.; then she roused up, answered questions, and kept her eyes open. Icterus did not increase, and towards evening her features were waxy-pale and distorted. During the afternoon, three copious, cadaverous-smelling, bloody stools. About 10 P. M. she became very restless, and died about midnight.

AUTOPSY.—Cadaver of middle size, adipose tissue and muscles well developed. Skin and both conjunctivæ icteric; abdomen meteoristic; both mammae large and pendulous; diaphragm on the right lower edge of the fourth rib, and on the left upper edge of the same.

After opening the thorax, a copious deposit of fat in the mediastinum anticum. The left pleural cavity contains about 200 grammes of a bloody fluid; the right pleural cavity is in the lower part obliterated. In the upper parts of the mediastinum anticum numerous blood-extravasations, reaching over into the pleuræ. Nothing abnormal in the pericardium; heart with quantities of epicardial fat; right ventricle very wide, contains only a little coagulated blood; the left ventricle contains scanty fibrinous coagula of an icteric color; cardiac muscle pale, in some places yellowish-white; valvular apparatus normal; the muscular fibres of the heart tough, and yet friable. Left lung covered with a few pleuritic ecchymoses of middle size, full of blood, moist on cutting, and contains a moderate quantity of air; right lung the same, only the ecchymoses are larger and more numerous.

After opening the abdomen, the gyri of the small intestines appear slaty, and like a deep, bluish-red marble; great meteorism; colon of a remarkable yellowish-white color; stomach dilated, and of a clear, yellowish-white color. Mesenterium full of fat, icteric, slightly imbibed with hæmatin; duodenum immensely dilated. Spleen hardly enlarged, tough, membrane somewhat thickened, parenchyma bloody, trabecular substance thickened. The stomach contains a dark-red, thick fluid mass, firmly adhering to the mucous membrane, and intermixed with a large quantity

of a glossy mucus. The mucus membrane, which has imbibed large quantities of hæmatin, is pale, puffed, on some places slightly icteric; the liver pretty large, weight 1920 grammes, surface smooth, with numerous small ecchymoses. When cut into, as also externally, the parenchyma remarkably anæmic, pale, of a sulphur-color; the large branches of the bloodvessels nearly empty, the form of the acini well preserved, acini of middle size, peripheral zone very broad, the centre small and mostly only visible as small red points; gall-bladder nearly empty, on the red mucous membrane a thick layer of a flocculent, grayish-yellow glossy mass. Retroperitoneal tissue of the renal region slightly infiltrated from hæmorrhage; left kidney very large, clearly showing the forms of the vesiculi; the organ in its thick diameter enlarged, of a relaxed consistency, with strong injection of the bloodvessels, and numerous small ecchymoses. Surface saturated, yellow. Cortex enlarged in breadth; parenchyma very pale, of a yellowish-white color; the form of the fascicles greatly interrupted. The fatty tissue of the calices renales infiltrated with quantities of blood, and slightly cedematous. Bladder holds about a teaspoonful of murky, dark-yellow urine; it is contracted at maximum, the mucous membrane pale-yellow and intact. Uterus pretty large, especially the body; wall thick, the numerous bloodvessels following a serpentine course; collum long; orificium ext. with funnel-shaped red edges; orificium int. gone; cervical canal wide, its mucous membrane swelled, reddened, shows hæmorrhages, the tubes covered with numerous tough, and sometimes very thick pseudo-membranous formations, on its fine edges strongly dilated. Between the serpentine tubes, enveloped in pseudo-membranes, the enlarged ovaries are lying, containing numerous cysts. Adjacent to it a reddish grayish tough tissue, and here and there some tough black foci of the size of a pea. In the small intestines a dark-red, thick fluid mass; mucous membrane full of hæmatin and greatly swollen; mucous membrane of the colon very pale. Brain very hyperæmic with a flattened surface.

DIAGNOSIS.—Intoxicatio phosphorica.

- Gastro-enteritis hæmorrhagica.
- Induratio et hyperæmia hepatis.
- Nephritis parenchymatosa.
- Hæmorrhagiæ retroperitoneales.
- Hepar adiposum cum ictero.
- Hepatitis parenchymatosa levis.
- Myocarditis parenchymatosa.
- Hyperæmia et œdema leve pulmonum.
- Hæmorrhagia subpleuralis et mediastini antici.
- Peritonitis circumscripta adhesiva.
- Hydrops tubarum.
- Oophoritis chronic cystica.
- Hypertrophia uteri.
- Endometritis hæmorrhagica.

MICROSCOPIC RECORD.—*Examination of the Muscles of the Body:* Muscular fibres well preserved, with clear horizontal striation; others consist of conglomerations of fatty drops, but without pigment-molecules; they show a great tendency to deliquesce, and have not a trace of horizontal striation. No increase of nuclei. In other muscular fibres a beginning degeneration is found, whereby the fatty drops are put either in horizontal striation, or in other places in longitudinal striation of the fibrillæ; here also no increase of nuclei. In the interfibrillary connective tissue some very large drops of fat, but no increase of them. The muscles of the heart show excessive fatty degeneration, and are full of a large quantity of fine brown granules.

Peripheric Nerves.—The intermuscular nerves are in some places decidedly fatty-degenerated, and show perfectly the picture of degenerated nerve-fibres. Even the large nerves (medianus and radialis were examined) contain some fatty fibrillæ without increase of the nuclei. Bloodvessels everywhere in fatty degeneration, especially the capillaries of the peripheric nerves, the intermuscular bloodvessels, and those of the spinal cord.

In the *central nervous system* no alteration in the nerve-fibres, nor in the ganglia. Neither excessive granulation, nor pigmentation, nor proliferation of nuclei. The neuroglia also normal, and even after a painstaking examination no cells with fatty granules could be discovered.

In the *liver* the greater part of the cells is changed into large fatty drops, and even those remaining contain such in large quantity. The interstitial tissue normal. The *kidneys* show decidedly fatty degeneration; the single urinary caniculi full of large fatty drops, still some of them remain of normal structure. The *urine* always gave an acid reaction, was dark-yellow, sp. gr. 1017, showed no reaction of biliary coloring-matter, and contained no albumen. Very little Indican; not a trace of sugar. The considerable sediment on the 13th-14th contained largely epithelium from the bladder, some red blood-corpuscles, and sparsely granulated, colorless, larger epithelioid cells with large nucleoli and drops of a yellowish color. At one spot there was a hyaline cylinder with numerous bile-tinged fat-drops, containing at one end a renal epithelial cell. Crystals were neither seen *intra-vitam* nor *postmortem*.

According to Schultzen and Riess (*Annals of the Charité*, xv, 1), the quantity of urea falls considerably in the urine, as soon as decided general manifestations (icterus, enlargement of the liver, weakness in the action of the heart) appear in poisoning by Phosphor., and in its stead we find sarcolactic acid and peptons; in fatal cases the urea disappears nearly entirely. It may be, the same authors remark, that in poisoning by Phosphorus the uric acid is increased. The urine in one case was carefully examined, but the quantity of urea had not decreased, although that of the uric acid was increased. Not a trace of leucin or tyrosin could be found. A thorough examination of the liver showed it free from sugar. — *Zeitschr. f. Pract. Med.*, 41, 1875.

If there is any truth in homœopathy, then Phosphorus must remove all curable conditions which it produces in persons of average good health, who took the drug for suicidal, or gave it to others for criminal, purposes. Let us compare the symptoms of these pathological states, as given by allopathic authorities with the pathogenesis as found in our *Materia Medica*.

Gastro-enteritis Hæmorrhagia.—Liman (*Gerichtliche Medizin*, ii, 507) says: In many cases, a short time after taking the poison, vomiting and eructations of masses, smelling like garlic, sets in with gastric manifestations, and when the poison passed the pylorus with enteritic symptoms, followed in rare cases with death. In most cases we find *after the third day* icterus, sensitiveness of the epigastric region, hæmatemesis. Bock (*Diagnostic*, p. 362) gives for phlegmonous gastritis: severe steady pain in the epigastric region, great anguish and even hiccough, painful eructations, vomituration and vomiting, bloatedness of the epigastrium, aggravated by pressure and by food and drink.

Hahnemann (*Chronic Diseases*, v, 61) gives us under Phosphorus the following symptoms hinting to gastro-enteritis: Pressure in the stomach after a meal; hiccough after a meal; oppression of the chest after a meal, with anxiety; tension and pressure in epigastrium with distension of the

abdomen ; constant eructations, with fermentation in the abdomen ; eructations of Phosphorus, with yawning, burning, and rawness of the throat ; gulping up of bile ; pains in the stomach, with nausea and vomiting ; puffiness of the stomach and abdomen ; violent burning heat in the stomach, sometimes issuing from the mouth like gas.

That Phosphorus not only causes hæmatemesis, but also cures it, Kafka (*Hom. Ther.*, i, 542) shows us. Thus he recommends it in capillary hæmorrhage from the stomach from venous stagnation, and as an analepticum to keep up the waning powers of life, when faintness and collapse threaten to extinguish it. Hughes (*Pharmacodynamics*, 2d ed., 442) certifies that Phosphorus controls the ulceration and hæmorrhage per rectum.

Induratio et Hyperæmia Lienis.—Bock (*l. c.*, 403) remarks that changes in the spleen mostly arise from hyperæmia in the spleen, produced either by mechanical causes, by morbid states of the portal vein, of the liver, heart, or lungs, or from a dyscrasia. We may then find a fixed local pain (from the serous covering) or a sensation of weight and pressure, frequent and intermittent chills, consensual gastric affections, etc. Niemeyer (*g. e.*, i, 800) considers such a hyperæmia caused by stasis, and the induration most probably a hæmorrhagic infarct, and in many cases of high-graded hyperæmia of the spleen, as in malarial infection, typhus, septicæmia, we may expect hæmorrhagic infarcts in the spleen. And per contra we find among the manifestations of Phosphorus (*Symptomodæ.*, ii, 492) violent pain in the left hypochondrium ; he was not able to stoop or to lie on the right side ; anxiousness below the left side of the chest, with bitter eructations ; violent pinching in the left hypogastrium towards the epigastrium ; afterwards sensation in that place as if something living were moving about there (the ductility of the splenic tissue explains such a sensation).

Nephritis parenchymatosa.—The three stages of Bright's disease, with their symptoms, are too well known to need repetition. Of the nine varieties of this disease given by Frerichs, Phosphorus finds only indication in the cæcætic variety, in morbus Brightii potatorum, and in that caused by mechanical encroachment on the circulation from organic diseases of the heart, lungs, or bloodvessels. Buchner (*Morbus Brightii*, p. 66) cites Hahnemann's symptoms, 1009 to 1061, as hinting to a deep disturbance of the kidneys, with which the cardiac symptoms, 1270-78, stand in close connection. *Passive venous stagnation* is to him the great characteristic of Phosphorus, as thus its action on the brain, lungs, heart, liver, and kidneys, find its most rational explanation.

Hepar Adiposum c. Ictero ; Hepatitis Parenchymatosa Lævis.—Liman (*l. c.*, ii, 509) always found in toxic cases of Phosphorus the blood dark, tarry, no coagula or only soft ones in the heart, the hæmatics diffused in non-coagulated plasma. No wonder that such an abnormal quality of the blood causes hæmorrhagic effusions in the serous membranes (peri and endocardium, pleura, mediastinum, peritoneum), and in the subcutaneous fatty and cellular tissue of the walls of the thorax and abdomen, and of the lower extremities. The liver is enlarged, with obtuse edges, light-yellow, and when cut into doughy, soft, strongly coating the knife, anæmic. This acute fatty infiltration of the cells causes the enlargement of the liver, and by the rapid and sudden compression of the commencements of the biliary ducts, the biliary infiltration of the hepatic parenchyma as well as the general icterus. Many authorities (Lewin, Bamberger, Schultzen) could be cited to prove *Phosphorus passes directly into the blood*, acting perhaps analogous to a ferment ; we differ here with Hughes (*Pharmacodynamics*, 448), and consider the hæmatic influence of Phosphorus its primary action. It certainly produces primarily venous stagnation, followed by dissolution of the blood-globules, and consecutively the affections on the circulatory organs (liver, spleen, and

kidneys, the purifiers ; the heart, the big engine of the circulation). Hering and others found Phosphorus beneficial in fungus hæmatodes, a variety of carcinoma, whose constitutional cachexia is more pronounced, and whose malignity is more early manifested than in any other form of cancer, and which rapidly destroys the sufferer by repeated hæmorrhages. Yes, "small wounds bleed freely," because the coagulability of the blood is destroyed, and the consequent degenerations necessarily follow. Mering examined the urine for leucin and tyrosin in his case of Phosphor. poisoning, and found none, whereas either one is pathognomonic for hepatic diseases, and their presence in atrophy of the liver is as well marked as their absence in Phosphor. atrophy. Thiernes and Casse experimented with Phosphorus at the veterinary school at Brussels (*Allg. Med. Centralz.*, 55, 1875), gave to their animals O_2 phosph. per os, or injected it into the veins, and as soon as symptoms of poisoning set in, made *injections of oxygen* in the veins, and witnessed the speedy disappearance of all symptoms of poisoning and an innocent combination of the oxygen with the Phosphorus in the blood followed. The oxygen must be pure and slowly injected into the veins. Repeated injections were several times necessary to remove the fatal action of the poison on the blood-corpuscles. Thus we see on the positive side that substances, like oxygen, changing venous into arterial blood, remove the symptoms produced by Phosphorus ; the animals enjoyed their former health again, and the liver showed no symptoms of disease ; the absence of leucin and tyrosin on the other side also prove that we have to look to the venous stagnation as the primary effect of Phosphor. poisoning.

But theorizing aside, how does Phosphorus act on the liver, and what does produce this fatty degeneration ? Linan (*l. c.*, 511) remarks, that the pathologico-anatomical state of the liver in acute atrophy of the liver differs from that of Phosphor. poisoning. In the former the liver may also be chrome-yellow, but it has diminished in size ; the acini are small, the cells are dissolved in a finely granulated detritus, and leucin and tyrosin are found in the urine in considerable quantity ; in the latter we find the liver enlarged and infiltrated with bile, and an acute fatty infiltration of the cells. Niemeyer (*l. c.* i, 736) differentiates the two forms of fatty liver ; in the one, the surplus of fat from the blood of the portal vein is deposited in the hepatic cells, in the other, the hepatic cells, whose nutrition is disturbed by morbid processes in the hepatic parenchyma, pass into a retrograde metamorphosis, into fatty degeneration. *Thus we have in the one case atrophy, in the other a fatty infiltration.*

This fatty infiltration of the liver, Niemeyer continues, has been frequently observed in phthisis pulmonalis, and Larrey, Budd, and Frerichs believe that it originates from the increased quantity of fat in the blood, in consequence of the emaciation and resorption of fat from other parts of the body, its symptoms are : a sensation of fullness in the right hypochondrium, the liver can be felt elongated, and reaching far below its normal state, the fæces only slightly colored, varicels on the capsule of the liver from compression of the bloodvessels, profuse diarrhoea, no swelling of the spleen nor any symptom of ascites. Per contra, we find in the pathogenesis of Phosphorus, sensitiveness of the region of the liver ; when touching it, one experiences a dull pressure in it, especially when lying on the right side ; stitches in the region of the liver from without inwards, with sensation as if she were held fast in that region ; diarrhoea, acute and chronic, gray stools ; protrusion of varices during stools, hæmorrhage from the anus and rectum, etc.

Let us return now for a few moments to Buchner, when he calls (*Morbus Brightii*, 65) Phosphorus the very antipode of the versatile Arsenicum ; Arsenicum affecting the left heart, Phosphor. the right one, or in other words the former causes arterial stagnation, the latter venous stag-

nation, with or without disturbance of the lesser circulation.

Myocarditis parenchymatosa, a disease very difficult to diagnose during life. Bock (l. c., 251) gives only the symptoms usual to carditis in general, and adds that the paralysis of the muscle causes *dilatation of the heart*, showing itself by considerable dulness on percussion, and by the absence of all manifestations of pericardial exudation. According to Piorry, myocarditis causes pain in the cardiac region, increased with every systole. The fatty degeneration of the heart is, according to Bamberger, a deposition of fatty granules in the primitive fibres, so that the whole muscular texture is lost, and the sarcolemma is filled up with closely standing fat-molecules. The heart thus becomes of a pale-yellow color, very friable, and can easily be torn. The extension of the fatty degeneration goes *pari passu* with the weakness of the heart.

In Mering's case as well as in others, described by different authorities, this fatty heart was clearly pronounced, and we all know that a weak heart and a dilated heart go hand in hand. If pathology gives us the symptoms: a tired sensation from the least bodily exercise—dyspnoea, anguish, and oppression from walking, palpitation, drawing and numbness in the left shoulder; we find corresponding to them under Phosphorus, weakness of the chest, palpitation of the heart, with anxiety, frequently only two or three beats, aggravated by motion and going off again when at rest.

Hyperæmia et Oedema leve Pulmonum.—The pathology of pneumonia is known well enough, but even in our school opinions differ about the stage when Phosphorus is indicated. Thus R. D. Hale (*Lectures on Acute Diseases of the Chest*, p. 54) considers this drug especially curative in the true croupous pneumonia, the more the inflammation involves the vesicular structure and the more the sputa assume the plastic character; and p. 47, he wishes us to bear in mind the occurrence of early prostration, and that the pathological condition does not improve in the same ratio as the constitutional symptoms, pointing to a morbid and morbid condition of the blood, which gives to pneumonic inflammation a character somewhat resembling essential fevers. With all due respect to Dr. Hale, we beg to differ with him, for Phosphorus does not produce a genuine inflammation; there is rather only a mere accumulation of blood in the veins, and extravasation of fluid blood in the tissues of the organs; we find it, therefore, not indicated in pneumonia crouposa, and we rather agree with Dr. Kafka (l. c., vol. i, 204), who uses Phosphor. in the first stage of pneumonia crouposa, only when the inflammatory condition already lasted some time with considerable infiltration, when the fever becomes remittent, when the patient is pale, feels weak, and collapsed, when the sputa are tough and cannot be expectorated, when no symptoms of resolution will set in, when diarrhoea threatens to use up the last remnants of vital power—then Phosphor. becomes our great analepticum; and Chargé (*Maladies des Organes de la Respiration*, 250) considers it rightly the specific for typhoid, tuberculous, and hypostatic pneumonia. He also finds Phosphor. never indicated in the beginning of a croupous pneumonia, but only when hepatization, red or even gray, has taken place, especially on the left side.

In pulmonary phthisis, Phosphorus gives us the same or similar symptoms. Thus Chargé (l. c., 314) cites: dry, hard, and tormenting cough, especially before midnight, and worse after rest; convulsive cough, with hardly any expectoration. When coughing, a sensation like an explosion in the head and a bruised feeling in the chest; cough till he vomits. Feeble voice, increasing to aphony in the evening; dyspnoea; short and rapid respiration. Cutting and lancing pains over the chest, especially over the left chest. Mucus accumulates in the bronchi, expectoration bloody or blood-mixed, flocculent, yellow, purulent, of a salty taste.

especially mornings and evenings, greatly weakening the patient. Chills even when well covered, interrupted by hot flashes; heat in the palms and soles, especially in the evening. Night-sweats, etc., etc.

If we ask, then, What is tuberculosis? the reply is, "An infiltration and condensation of the pulmonary tissue, compressing the air-vesicles, rendering oxidation at a low ebb, and thus producing again a venous stagnation." Kafka justly also considers Phosphor. the remedy for broncho-pneumonia *ab initio*, where it loosens the phlegm, makes expectoration easy, and thus allows the oxygen again to penetrate into the very recesses of the air-vesicles, changing a poisoned blood into a healthy circulation.

Hæmorrhagiæ Subpleuralis et Mediastini Antici.—These as well as the retroperitoneal hæmorrhage can be easily explained by the fluidization of the blood. Liman (*l. c.*, 513) remarks, that the blood after Phosphor. poisoning does not look turbid, but transparent, as everywhere, where the coloring-matter is dissolved in the plasma, when death sets in a few hours after the poison was taken, but the fatty degeneration is only observed where some days have passed (from two to eight days), and he considers it a proof, where fatty degeneration is observed, that several days elapsed between the ingestion of the poison and death. Hence we may conclude that the fluidization of the blood is a primary effect of Phosphorus, and the fatty degeneration a consecutive one.

Peritonitis Circumscripta Adhesiva.—From the history of the case it seems that the inflammation was limited to the peritoneal covering of the right lobe, where palpitation was painful, and she remained quietly on her back, as if every motion were painful. Kafka (*l. c.*, i, 731) remarks that persons suffering from tuberculosis, morbus Brightii, etc., frequently incline to peritonitis, and the symptoms: stitches in the hepatic region, from without inwards, and its sensitiveness to the touch, or the sensation as if the liver were held fast (adhesion) hint at least to a partial peritonitis.

Hydrops Tubarum; Oophoritis Chronica Cystica; Hypertrophia Uteri; Endometritis Hæmorrhagica.—We only see here a chronic diseased condition of the sexual organs; perhaps the hæmorrhagic effusion on the mucous membrane of the uterus might be laid to the Phosphorus, for we read: Discharge of blood from the uterus between the menstrual periods, after a suspension of eighteen months (in a female of 51 years), the menses (?) appear again for five days with violence, having a bad smell, bleeding of an ulcer, etc.

Central Nervous System.—In the case in question nothing abnormal was found. In Liman's cases only hyperæmia of the meninges and of the brain-mass. Thus we see that pathological anatomy fails to clear up the wealth of symptoms which Phosphorus shows us in its pathogenesis; but Hahnemann (*Chronic Diseases*, v, 43) gives us the keynote, "when the vital powers are weak and exhausted, or when the patient suffers with chronic diarrhoea;" and Noack and Trink's (*Symptom. Codex*, ii, 477) find Phosphorus indispensable in acute affections, in the course of which the cerebro-spinal system of nerves becomes very much depressed, and finally threatened with paralysis. Such dangerous conditions are frequently attendant on pleurisy, pneumonia, typhus abdominalis, acute exanthemata, and are, as by miracle, removed by the use of Phosphorus. All these diseases mentioned by Noack and Trink produce venous stagnation or fluidization of the blood, hence the applicability of Phosphorus, or of its antidote, oxygen.

Hughes (*Pharmacodynamics*, 450) truly remarks, that "the temporary stimulation caused by small quantities of Phosphorus is never seen as a result of poisonous doses. On the contrary, even in acute cases, there are often symptoms of nervous depression, and where life has been prolonged, there has been progressive palsy." (452): "The paralysis is of a functional

nature, from debilitating causes, such as acute diseases, sexual excesses," etc. "When the cerebral hemispheres themselves are affected, it appears to have no influence." How then can we explain the axiom of Moleschott: "No thought without Phosphorus?" or that there is after some mental or intellectual duty more phosphoric acid than usual in the urine, because of the greater oxidation of phosphorus which has taken place in the brain (Draper, *Physiology*, 23)? And still it is said, there is no special connection between the intelligence and the amount of Phosphorus in the hemispheres. Would such exhausted brain-force be rejuvenated by one of our high potencies of Phosphorus? It may be, for we find such symptoms under it as, slowness of thought, emptiness of the mind; indisposed to work, the head feeling free; slight stupefaction and pain between the eyes, in the forehead, *going off after a meal*; headache when thinking; amelioration of the headaches after a meal and in the fresh air. Gallavardin's case (*Brit. Journal*, xx, Hughes, *l. c.*, 448) shows that Phosphor. produces a paralytic weakness of the back and extremities, and trembling at every effort, as if he was not sure of himself, painless fibrillary contractions, easily excited by contact, and per contra we find this muscular weakness removed by the same drug.

Phosphor. is a natural element of the human body, mostly occurring in combination—as in the neutral phosphate of sodium in the blood and saliva, the acid phosphates of the muscles and urine, the basic phosphates of calcium and magnesium in the bones and teeth—and therefore must also be a natural element of the food we partake of, in order to keep up the equilibrium. We find Phosphorus in the yolk and white of the egg, and in milk—the substances on which the young animal subsists during the period of its most rapid growth—it abounds in many animal substances used as food, in the seeds of many plants.

Schüssler, in his tissue remedies, gives us five combinations of Phosphorus for therapeutical purposes, and as inflammation is now considered a paresis of the vasomotor nerves, he finds his antiphlogistic in Ferrum phosphoricum; sepsis and nervous weakness are controlled by Kali phosphoricum; scrofulosis, or rather a failure in development, a remaining at a lower stage of human growth, may be changed by Calcarea phosphorica. There are certainly thoughts for study in Schüssler's theory, although we may object to his generalizing method.

Oh that our allopathic friends, who daily witness the molecular action in nature, would also become convinced that "the mild power is great" in all our therapeutic action! From allopathic sources we have shown the action of Phosphorus on different organs; from our own pathogenesis we show its curative action on the same organs. What more proof do they want in favor of *similia similibus curantur*, and of the high value of minimal doses?—*The North American Journal of Homoeopathy* May, 1876.

चरकसंहिता ।

कचस्थानम् ।

चतुर्विंशत्यः ।

ऐन्द्रीमद्भीमिन्तरीर्वासहस्रवीर्वाभीषाध्वयाभिषारिद्रावाक्यु-
भीविष्वक्सेनकान्ता इति दशमेभिः प्रजास्यापमानि भवन्ति ॥ ७३ ॥

असताभवाधालीमुक्ताश्वेताजीवन्वातरसानसूक्ष्मवीर्वाक्षिरा
पुनर्नवा इति दशमेभिः वयःस्यापमानि भवन्ति ॥ ७४ ॥

इति पञ्चकः कषायवर्गः ॥

इति पञ्चकषायवयतान्वभिसर्गस्य पञ्चायस्यैकाकषायाः सप्ततास्र
कषायाणां सप्तयोदाहरणार्थं व्याख्याता भवन्ति । नहि विसरस्य

CHARAKA SANHITA.

CHAP. 4. SHARVIRECHANA SATA'SRITYA.

73. Aindri (अंदिनी), cucumis madraspatanus), brahmi, sata-
vīrya (सर्वीरा, panicum dachylon), sahasravīrya (सहस्रवीर्य, panicum
dacollyn), amoghā (अमोघ), avyathā (अव्यथ वा नक्षणीय), śivā,
arishṭā (कटकी), vātyapushpī (वैद्यपुष्पी), and vishvakṣenakāntā,—
these ten are prajāsthapana.

74. Amritā, abhayā, dhātṛī, muktā (मूकती), śvetā (अर्णवज्जिता),
jīvantī, atirasā, mandūkāparṇī (मण्डूकपर्णी), sthīrā (जीवनीय), punar-
navā,—these ten are vāyasthāpana.

These are five kashāya Vargas.

75. Thus have the five hundred extracts been described under the
heads of fifty principal varieties, for the purpose of defining and

७३ । ऐन्द्रीमद्भीमिन्तरीर्वासहस्रवीर्वाभिषारिद्रावाक्यु-

७४ । असताभवाधालीमुक्ताश्वेताजीवन्वातरसानसूक्ष्मवीर्वाक्षिरा

प्रमाणमस्ति न चान्यतिसंक्षेपोऽप्यबुद्धीनां सामर्थ्यादीयकस्यवे।
तथाहमतिचक्षेमेवांगतिविस्तरेण चोद्दिष्टाः । एतावन्तीहोक्तम-
त्यबुद्धीनां व्यवहारः । बुद्धिमतीषु प्रत्यक्षांशुमानसुक्तिशुब्धसांमान-
सुक्ताव्यञ्जनावेति ॥ ७५ ॥

एवं वाहिनं भगवन्तमात्रेवमग्निवेश उवाच । नैतानि भगवन्
पञ्चकषादयमेतानि पूर्वमेतानि । तानि तानि श्लोकाणि संभवन्ते
तेषु तेषु महाकषादेष्ट्विति ॥ ७६ ॥

illustrating the principal varieties of extracts. There is no limit of amplification,* and too much brevity is not adapted to the capacities of inferior understandings. Hence they have been described neither too briefly, nor too much in detail. The above will serve for the practical use of inferior understandings, and be suggestive, as well, of unmentioned uses, to persons of superior understanding who observe, infer and reason with skill.

76. To A'treya, who was thus lecturing, Agniveśa said. The extracts mentioned above, adorable sir ! are not in reality five hundred in number. Inasmuch as the same things are found repeated in the several varieties of extracts.

* Guided by the commentators Chakradatta and Sivadāsa we have thus rendered the passage,—*nāhi vistaraṣya pramāṇam asti*, taking *pramāṇam* to mean limit, and not proof under any of its heads, *pratyakṣa* (direct preception, i. e., by the senses), *anumāna* (inference), *upamāna* (comparison), or *śabda* (authority). According to an excellent Sanskritist, who is also a good *nyāyīyika* (logician) *pramāṇam* should be taken to mean proof in the general sense, in which case the meaning of the passage would be, "there is no proof of amplification," that is, as we understand it, there is no proof for describing the extracts in greater detail, in other words, A'treya means to say, that the details already given are enough for purposes of definition. According to another Sanskritist, a gentleman with a very clear head, *pramāṇam* should be taken to mean proof in the sense of authority,

तसुवाच भगवानात्रेयः । नैतदेवं बुद्धिमता द्रष्टव्यमग्निवेद्य ।
 एकोह्यनेकां संज्ञां लभते कर्मान्तराणि कुर्वन् । तद्यथा पुरुषो
 वह्नां कर्माणां करणे समर्थो भवति स वत् वत् कर्म करोति तस्य
 तस्य कर्मणः कारुण्यकार्यसंभ्रुतं तत्तद्दीप्यमानमविशेषं प्राप्नोति ।
 तद्वदौषधद्रव्यमपि द्रष्टव्यम् । यद्वैकमेव किञ्चिद्रव्यमासादयामः
 तदाहुतं यत्सर्वकर्मणां करणे समर्थं स्यात् कसतोऽप्यदिष्टेदुपधा-
 रवितुषुपदेष्टुं वा शिष्येभ्य इति ॥ ७७ ॥

तत्र श्लोकाः ॥

यतो यावन्ति यैर्द्रव्यैर्विरेचनयतानि षट् ।

उक्तानि संग्रहेणैव तथैवैषां षडात्रयाः ॥ ७८ ॥

77. To him thus answered A'treya. Agniveśa, intelligent men should not view it in that light. One thing may acquire various names from the various functions it performs. For instance, a man may be capable of performing various duties, such an one will be called by names corresponding to those duties. The same with drugs. If it is possible to have one substance which is capable of serving all purposes, who will wish for more either for use or for lecture ?

Summary.

78. In this chapter all the substances which form the six hundred evacuants have been described in groups ; as likewise the six bases of these evacuants.

and the meaning of the passage would then be, "there is no authority for greater detail," that is, no previous author has described the *kashāya vargas* in greater detail, and therefore A'treya following them does not think it necessary to enter into greater detail himself.

रसा वसणवर्ज्याश्च कषाया इति संज्ञिताः ।
 तेषां पञ्चविधा योनिः कषायाणां सुदाहता ॥ ७१ ॥
 तथा कल्पनमन्धेषामुक्तां पञ्चविधं पुनः ।
 महताश्च कषायाणां पञ्चाशत्परिकीर्तिताः ॥ ८० ॥
 पञ्चचापि कषायाणां यतान्मुक्तानि भागशः ।
 लक्ष्यार्थं मन्थादि विस्तरस्य न विद्यते ॥ ८१ ॥
 न चात्मनिसंज्ञेयः सामर्थ्याद्योपकल्पते ।
 अल्पबुद्धेरयं तस्मान्नात्मनिसंज्ञेयविस्तरः ॥ ८२ ॥
 भन्दानां व्यवहाराच्च बुधानां बुद्धिदृष्टये ।
 पञ्चाशत्को ह्ययं वर्गः कषायाणां सुदाहृतः ॥ ८३ ॥

80. The extracts are named after the tastes, with the exception of salt. These five bases of the extracts have been illustrated.

81. The five modes of preparation of these extracts have again been described. Of the principal extracts fifty varieties have been mentioned.

82. Five hundred extracts have been mentioned in these divisions for purposes of definition. There is no limit amplication.*

83. Too much brevity is not suited to the capacities of inferior understandings. Hence the extracts have been described neither too briefly, nor too much in detail.

84. For the practical use of inferior understandings and for the development of the understandings of the wise, these fifty varieties of extracts have been described.

तेषां कर्मसु बाह्येषु कीनमभ्यन्तरेषु च ।

संयोगो विमयोगश्च कोवेद् सजिघम्वरः ॥ ८४ ॥

अग्नीत्यादि । यज्विरेचनक्षताचितीकीनाम चतुर्विधाः
समाप्तः ॥

84. He, who knows how to combine them properly for external and for internal use, is the best physician.

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THE
CALCUTTA JOURNAL
OF
MEDICINE

VOL. VIII.] Sept. 1876. [NO. 3.

EDITOR'S NOTES.

• THE GLYCOGENIC FUNCTION OF THE LIVER.

The following facts have been established by the experimental researches of M. Claude Bernard which have been submitted before the Academie des Sciences at their sitting on the 14th August last :—

1. The blood, in traversing other organs of the body than the liver, is found to have become impoverished of sugar.

2. In the liver the blood in the hepatic veins contains more sugar than blood in the hepatic artery and in the portal veins.

3. The blood of the vena cava inferior is found suddenly enriched with sugar, before entering the heart, and just above the level where it is joined by the hepatic veins. •

Thus the formation of the sugar that exists in the blood is proved to be localized in the liver, the sugar destroyed every where throughout the system being regenerated constantly in that organ. When the glycogenic function of the liver augments, the animal becomes diabetic, but when it diminishes, the sugar in the blood diminishes and is even altogether extinguished, and this is followed by very serious symptoms and even death.

DR. SIEVEKING ON HOMŒOPATHY.

Homœopathy has become and is daily becoming too prominent to be ignored. Orthodox professors feel this, and to save their reputation must have indirect flings at the system. We accordingly find that Dr. Sieveking, in his Address in Medicine at the last Annual Meeting of the British Medical Association, though he had "not the slightest desire to revive the controversy on homœopathy," had not the slightest hesitation to endorse the views of the late Sir John Forbes regarding it, without adducing the slightest original proof to justify the endorsement. And what these views are? What but those which are being repeated *ad nauseam* from Hufeland since the birth of homœopathy? These views are "that the curative powers of nature suffice to explain all the triumphs of homœopathy," and that homœopathy, if it succeeds, will prove the grave of science, "physicians being converted from philosophers into artisans." Dr. Sieveking very justly points to the searching examinations into the operation of medicinal agents, that are being made in the present day, as giving to modern medicine a claim to the title of science. But does he know who it was that urged these investigations upon the profession, and who it was that carried out these investigations with a devotion and self-sacrifice unknown before or since?

ALBUMINURIA, INDUCED BY TINCTURE OF IODINE.

Dr. Simon attempted to treat the scald of children with a mixture of tincture of iodine and glycerine without previous depilation. He one day found a small girl, who had been treated in this way, manifesting all the symptoms of iodism. Analysis of the urine showed a considerable amount of iodine. Eleven others treated in the same manner had iodine in their urine, and that of four of these contained also albumen. To determine positively the origin and cause of the albuminuria, he analysed the urine of three girls, one suffering from porrigo, another from phthisis, and the third from white swelling, and found neither albumen nor iodine. After the external application of the tincture of iodine, he demonstrated presence not only of iodine, but also of albumen in their urine. The treatment was discontinued, and in a few days their urine was entirely free from these articles, both of which again appeared on resuming the applications. From these observations, Simon concludes: (1) that iodine externally applied is absorbed, and afterwards excreted by the urine;

(2) that when thus applied it may lead to iodism ; (3) that in a large proportion—perhaps half—of cases albuminuria may be produced.—*British Medical Journal*, Aug. 19, quoting from *Allg. Wiener Med. Zeit.*, May 16th 1876, and *France Medicale*.

THE TOXICOLOGICAL RESEMBLANCE AND DIFFERENCE BETWEEN DIGITALIS AND THE BILIARY SALTS.

From the researches of MM. Feltz and Ritter recently laid before the French Academy regarding the actions of Digitalis and the Biliary Salts, the following appear to be established :—

The resemblance consists in the following :

1. The temperature is lowered by about a degree centigrade by both poisons.

2. The arterial tension descends from two to three centimetres of mercury for the biliary salts, and from six to seven centimetres for digitalis.

3. The respiration becomes irregular in the two cases, without any great departure from the normal standard.

4. The pulse is lowered by both poisons.

The differences are—

1. The extremest descent of the pulse, in the case of digitalis, lasts only a short time, and is followed by acceleration, which continues at least twenty-four hours. In the case of biliary salts the diminution in the number of beats is maintained for a much longer time, and is *not* followed by acceleration.

2. The loss in weight under digitalis is much greater than under the biliary salts.

3. In cases of poisoning with these substances, where the pneumo-gastric and sympathetic have been divided, the temperature and respiration remaining the same in both, the pulse is affected under the biliary salts, and *not* affected under digitalis.

4. The heart is found invariably in a state of relaxation in death from digitalis ; in a state of tetanic contraction in death from biliary salts.

5. In digitalis poisoning the heart is most easily excited to contraction by the galvanic current.

SPLENOTOMY.

M. Péan, we learn from the *Lancet* (Aug. 19), has performed this operation in two cases with complete success. As exceedingly interesting, and calculated to encourage its repetition in intractable cases of enormously enlarged spleen, we give the details of the operation in the words of our contemporary :—

The patient was a married woman aged twenty-four years. A history of miscarriages and dead children was strongly suggestive of syphilitic taint. A splenic tumor had been observed steadily increasing for eighteen months. In February the tumor filled almost the whole abdominal cavity ; it extended to the pelvis and even to the right iliac fossa. Various symptoms, apparently secondary to the tumor, distressed her, and the abdominal pain was constant. The patient implored an operation, which was performed on the 25th of April. An incision was made along the linea alba from three inches above the umbilicus to two inches and a half above the pubis, and a corresponding incision was made through the peritoneum. The tumor was covered by the omentum ; this was removed from below upwards, and pushed to the right of the tumor, beneath the right hypochondrium, and both it and the intestines were kept back by sponges and warm napkins. The tumor had the characteristic reddish-violet colour of the spleen. It was seized at its lower extremity, and gradually raised within the lips of the wound, until it rested on the hands of the assistants who were keeping back the intestines. No other organ escaped. The gastro-splenic omentum was about three-quarters of an inch wide at the level of the hilus ; it contained bloodvessels and enormous lymphatics. One splenic vein was the size of the index-finger. A wire ligature was passed round the whole pedicle, great care being taken to avoid the pancreas. The pedicle was then surrounded by sponges, and the spleen separated at the hilus by a single cut, being at the same time turned quickly outwards. About a quart of blood escaped in a jet from the spleen, but none fell into the abdomen ; otherwise not more than thirty grammes of blood were estimated to be lost. No adhesions were met with. The sponges were removed, the great omentum spread out over the intestines, and the abdomen closed, the pedicle being retained between the lips of the wound. The progress of the patient was excellent. The febrile reaction was slight. Some blood appeared in the urine on the third day, but diminished and disappeared a few days later. The pedicle separated in a week. The patient's spirits were very good. Eighteen days after the operation she sat up, and a week afterwards returned home.

THE PATHOLOGY AND TREATMENT OF BURNS.

DR. BEDFORD BROWN observes that although much has been written upon the subject of burns, their medical history remains unsatisfactory. They have probably been too much regarded as merely local in their character, than as having most intimate and important relations with the general system. Besides the first general impression made upon the system in the shape of nervous shock, there are certain coincidental morbid phenomena which are of great importance and little understood. In cases of excessive nervous shock caused by extensive burns, thrombosis of the heart and large veins entering the right side of that organ not infrequently occurs; and this phenomenon is met with especially in this kind of injury, not only because of the excessive nervous depression that is produced but also from blood which has been disorganised by the local action of heat being-carried from the burned tissues to the centre of circulation, and readily forming nuclei for the formation of thromboses. Hence the necessity of accurately distinguishing between these and simple nervous shock with respect to treatment. In simple shock, the pulse, though exceedingly feeble, is not usually much accelerated, while it is generally regular in rhythm. The cardiac sounds are very feeble, but distinct. The temperature is greatly reduced, and the complexion is pallid, while the respiration is little increased in frequency, and there is an absence of præcordial distress, though nausea may be present. But in shock accompanied by thrombosis, the breathing is painfully laboured and frequent; the action of the heart is tumultuous, irregular, feeble, and very frequent; the complexion is livid, while the skin is cold and bathed in perspiration; præcordial distress is painful, and the cardiac sounds are almost obliterated. There cannot be a rational doubt that death following extensive burns directly is often the immediate result of cardiac thrombosis.

Capillary embolism may also constitute one of the chief causes of death in the secondary stages of burns during the reaction which ensues, portions of the disorganised blood becoming lodged in the pulmonic or portal circulation, producing blood-stains, hyperæmia, inflammation, and suppuration. Thus we may have, as the result of capillary embolism in the pulmonic system, pleuritis, pneumonia, or abscess, with inflammatory fever; and in the portal system, peritonitis, ulceration of the intestines, with diarrhoea or dysentery, and abscess of the liver. In many cases all the characters of true pyæmia are developed. The microscopic emboli obtaining lodgment in the

doudenum, excite ulceration, which is probably an effort at elimination. Mere extent of burn, Dr. Brown observes, is not always the cause of death, for numerous cases of extensive burns that have come under his notice were healing favourably until symptoms of capillary embolism suddenly set in, with congestion, inflammation, and ulceration.

The protracted and unceasing pain from burns, so much greater than that from other injuries, is in itself probably a serious obstacle to recovery; for painful wounds heal less readily than those that are painless. This peculiarity in burns arises from the exposure and injury of myriads of terminal branches of sensitive nerves supplied to the skin; while in the burned tissues there is a constant tendency to contract, producing increased pressure around these inflamed nervous terminations. This induces incessant pain, until finally, by this compressing process, their organisation is destroyed, as is indicated by the great want of sensibility in the cicatrix.

In the treatment of simple primary shock, while all concede the necessity for anodynes, the free use of diffusible stimuli and quinine are of great importance. The quinine, by an action analogous to that which it exerts in fevers, not only aids in restoring reaction, but also moderates this, and prevents a high degree of febrile excitement. In shock with cardiac thrombosis opiates are dangerous, and quinine in large doses is too depressing, but in small ones is useful. *Liquor ammoniæ*, with iodide of potassium and alcoholic stimulants, constitute the most important remedies. The following is a valuable combination:—*R* Liq. ammon. fort. ʒij. , potass. iod. ʒjss. , glycerin. ʒj. , elixir calisayæ ʒv. —*m.*; a table-spoonful to be given diluted every hour. The ammonia might also be used hypodermically with advantage. Cases of hectic fever arising during the progress of very extensive burns with copious suppuration are best treated with a combination of tincture of chloride of iron, chlorate of potass, and quinine. In cases of internal inflammation, suppuration, or ulceration from capillary embolism, either with or without symptoms of pyæmia, these remedies are equally valuable, but they should be associated with antiseptics of a decided character—carbolic acid in the form of sulpho-carbolate of sodium probably being one of the best adapted of all this class for internal use. Dr. Brown believes strongly in the efficacy of both external and internal antiseptics, the large mass of disorganised tissue furnishing such ample source for the development of septic material, which, when absorbed into the general system, is the true cause of many of the local and general morbid

phenomena usually attributed to mere sympathetic influences. In many of the cases of sudden fatal termination from comparatively slight burns, septicæmia is the real cause of death. "Typhoidism in the type of febrile reaction in burns, as in wounds, always indicates septicæmia." Of all local treatment he prefers iodoform, in the following formula :—R. Iodof. ʒij., ung. cetacei ʒj., ext. conii ʒjss., acid. carbolicæ gt. x. This, spread on fine linen, is applied twice daily to the inflamed surface, and then enveloped in oiled silk, no other dressing being required. In cases where there is great dryness of surface from destruction of vitality and want of exhalation, the wound, before applying the ointment, should be coated with the common linimentum calcis, which affords a soft and moist dressing, and in nowise interferes with the action of the iodoform. The iodoform acts as a certain and most effective sedative on the painful and exposed surface, and at the same time as an antiseptic. It reduces inflammation and suppuration, when in excess, in a remarkable manner, promptly converting a most painful and irritable wound into one that is comparatively painless. It is also an excellent promoter of healthy action and healing process, and has besides the great advantage of rendering the use of anodynes unnecessary.—*Medical Times and Gazette*, August 26, 1876, quoting from the *Philadelphia Med. Times*, July 22.

THE FUNCTIONS OF THE SPLEEN.

Translated from the French of M. Parville as quoted in *Les Mondes*,
17th Aug. 1876. BY THE EDITOR.

Hitherto it was believed that it is in the blood that the largest quantity of the iron of the organism resides. The muscles contain it in notably less quantity. M. Picard, in analysing glandular organs, has found that the spleen contains a quantity of iron much larger than that contained in the blood, a quantity which is always quadruple; and this is the only gland in which this is the case. In the liver, which, next to the spleen, contains the largest quantity, the proportion always stands either equal to or less than that in the blood.

In all glands which are in repose or paralysed, as was demonstrated before by M. Claude Bernard, the blood is dark. MM. Malassez and Picard have shown that in such cases the number of red globules is notably diminished. When the gland is in functional activity, the blood becomes bright red (rutilant), it absorbs oxygen and the number of globules increases. This is the very opposite of what happens in the spleen. When the spleen is in repose or paralysed by section of its nerves, it increases in volume, being full of bright red blood; the number of globules is produced in the largest quantity. When the spleen enters into functional activity after meal, or when it is artificially stimulated, it diminishes in size, the blood becomes more yellow; the number of globules and the quantity of iron are diminished. In return the general richness of the blood augments.

MM. Malassez and Picard have not yet interpreted these facts. We are now only permitted to say that their conclusions appear to us to throw some light upon the yet obscure functions of the spleen. This organ, when in function, becomes impoverished in respect of globules and of iron. It is at the same time a reservoir the richest in iron of the whole economy. Its character appears, therefore, to be somewhat that of a regulator of the respiratory capacity of the blood. It retains and stores up the vehicles *par excellence* of oxygen, that is to say, the globules, the iron, &c., conserves them or throws them into the circulation according to its wants, and modifies likewise the energy of the

respiratory combustion. The work of the whole organism rests upon the spleen.

For ourselves, it is not the iron which regulates the respiratory capacity of the blood; it is on the contrary the richness of the air in oxygen, for equal volumes, which regulates the distribution by the spleen of iron and of globules to be put in circulation in the blood. If the air is rich, if the respiration is ample, the spleen delivers up the iron in consequence, and the richness in iron, in globules, and in oxygen of the blood increases. The opposite effect is produced if the air is confined and its pressure low. The variations in the richness of the blood are connected with respiratory phenomena, and with causes which modify them, as for example, atmospheric pressure, temperature, humidity, &c.

M. Malassez has found that the number of red globules is more considerable in winter than in summer. This is as it should be; the mean atmospheric pressure is greater in winter than in summer by one millimetre. The air, for equal volumes, is more charged with oxygen; the spleen proportions in consequence the quantity of iron and of globules.

I should have wished that M. Malassez had noticed the barometric pressures when he made his experiments. For the number of globules certainly depend upon this pressure and, in not indicating it, he has omitted an essential characteristic of the problem. Thus, in Paris and at the level of the sea he found a difference of about 700,000 globules. But between Paris and the sea the difference of pressure of the atmosphere is about 3 millimetres of mercury at the same instant, and the difference of pressure between stations slightly different may reach 15, 20, 30, 35 millimetres of mercury. Now, when one sees the difference of mean pressure between winter and summer to give a difference of nearly 500,000 globules, one regrets that these essential elements have not been taken into account in the estimation.

One cannot know exactly which is the preponderant factor in the enrichment in globules? Is it the pressure which reacts upon the quantity of oxygen absorbed? Or is it really by reaction the absolute augmentation of the globules, &c.? Impossible to say.

The same remarks concerning baths. The pressure in a bath should never be neglected; it modifies the amplitude of the respiratory movements. After a violent exercise the respiratory movements are also very much augmented. It is very desirable that M. Malassez should recommence his experiments by varying the altitudes and precisely stating the conditions of experimentation from the point of view of barometric pressure.

The variations in the richness of the blood might well in great

part only indicate, like the barometer, the changes in the pressure of the inspired air.

One perceives nevertheless all the importance of the augmentation of globules and of iron in the blood from the physiological point of view. To discover that the richness in globules has increased is in effect to establish that oxygen has penetrated well into the economy, and this is a sign of health.

In order that the blood may be charged with iron, the system must have it; it is good then in certain cases to administer iron in disease. But it will be entirely useless to give it, if one cannot improve the respiration at the same time. The spleen takes in its normal provision, and only distributes the quantity necessary to convey the oxygen introduced; the rest, like all unused aliment, is thrown out of the economy. Administer iron then, but at the same time give air, the active air! People become anæmic and chlorotic more frequently by deficiency of good air, and we should not be astonished to see the number of blood globules diminish. The spleen retains in its tissues the largest quantity of iron, because the quantity of oxygen, which enters the respiratory passages, cannot compel it to bring more of it into the circulation. Here unexpectedly is enunciated the grand economic principle of supply and demand. The preceding considerations explain the part which the spleen may be made to play in therapeutics. It is an organ of extremely variable capacity. Its size can increase in a few hours to four-fold the normal one. (The normal length of the spleen is 9 to 11 centimetres.) The spleen enlarged is the spleen surcharged with globules and with iron; it is necessary to reduce it in order to cause it to give them back. The hydropathic applications upon the spleen reduce it very quickly, and also exercise upon the respiratory functions and upon the whole organism an extremely salutary effect.

One last remark, after M. Charles Speck: The amplitude of the respiratory movements increases after each meal. The quantity of air which traverses the lungs is also greater by 12 per cent. than what it was before. Nevertheless the proportion of carbonic acid exhaled remains the same. What becomes then of the oxygen in excess? Evidently the spleen augments the number of globules in the circulation and thus stores up oxygen in the blood, which soon proceeds to burn the digested alimentary substances. This is, in fact, storing up (aprovisionnement) which takes place. It is true that M. Malassez has found that after meal, sometimes the number of globules are diminished. This takes place when the food consists chiefly of albuminoid substances. In such case, in fact, the consumption of oxygen far from being increased, is diminished, according to M. Speck.

One sees here, even then, the intimate correlation that exists between the function of the spleen and the energy of the respiratory combustions.

To recapitulate: These researches especially demonstrate this capital fact: The respiratory faculty of the blood is in direct relation with its richness in globules and in iron; and the spleen exercises a considerable influence upon the distribution of the elements of the blood. These researches have thus cleared up some hitherto very obscure phenomena, and have given to the physician new and most powerful means of clinical investigation.

• NOTE BY THE EDITOR.

Our readers are no doubt aware that the most elaborate researches that have ever been made into the functions of the spleen were those made by the late Mr. Henry Gray, which obtained for him the Astley Cooper Prize in 1853. According to Mr. Gray the spleen regulates the *quantity* as well as the *quality* of the blood;—the quantity by acting as a diverticulum when the circulating current receives an accession to its volume from any source;—the *quality* by retaining an excess of the solid constituents, the blood globules and iron in particular. Dr. Carpenter took objection to the latter by asking “1. what becomes of all the solid matter of the blood, which is thus apparently kept back by the spleen?—and 2. How is it that this reduction in the solid matter does not produce a greater effect in the general mass of the solid constituents of the blood?” These are indeed formidable difficulties in the way of the reception of Mr. Gray’s theory of the functions of the spleen. But the correlation established by MM. Malassez and Picard between the spleen, the respiratory capacity of the blood, and the oxygen of the air removes those difficulties. The spleen does not retain the solid constituents permanently, but merely serves to preserve the balance. There is a continuous interchange of supply and demand going on; and it is only when the supply is less than the demand, that we have disease, the organ becoming enlarged beyond its normal limits, by retention of nutriment which ought to be delivered up to the system, or which the system fails to exact from it.

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THE INDIAN DAILY NEWS AND OUR STATISTICS.

We are almost sure our readers have no idea, and indeed could have none, of the nature of the correspondence that appeared in the *Indian Daily News* regarding the statistics of our Out-door Dispensary published in our July number. In vindication of our last article on the subject, and just to give our readers an idea of the sort of stuff that can find its way in the columns of our contemporary, and also to let our readers have a glimpse of the atmosphere of his *sanctum editorium*, surcharged with "editorial rights, privileges, usages, and immunities," we publish under our gleanings the two correspondences, as well as the article which our worthy colleague of the press has chosen to pen, or perhaps to admit as his own. We say "admit as his own," because it is impossible to believe that our learned brother, the "Father of the Press," could have so far forgotten himself and his own tongue as to have produced such an article as that. But in this matter we must not be too confident, inasmuch as we sincerely believe that *our* English must be inferior to the English of an Englishman.

It is needless to waste words, or take up our space, in attempting a refutation of the charges brought against us by the *News* and its correspondents. The refutation was given in the invitation to "come and see" that we gave them. The invitation has not been accepted, and how otherwise it is possible to bring conviction home to their bosoms, so innocent of all "self-glorification," and so full of zeal for "truth, the whole truth, and nothing but the truth," we do not know.

We will notice only the fresh charges brought against us by the Editor himself, charges against our judgment as editor, and against our capacity to appreciate the duties of an editor.

According to our model editor, we "*must* have strange ideas of the duties of an editor, and a very crooked idea of fair play," because we said that the letter of a generous-hearted European, which was "in reply to the insinuations of 'Self-glorification,' was *suppressed*, though subsequently L. Salzer M. D.'s letter, containing further insinuations, was admitted;" and because from the fact of our having said so we have committed ourselves to "*supposing* that all and every letter that is not published is suppressed from a sense of fair play."

The letter of the generous-hearted European, the editor will have us believe, was not *suppressed*, but simply not *admitted*, because, in his sapient opinion, "it was no reply at all," because the writer "did not perceive that one fact militated against another," and lastly because he "had evidently missed the point at issue." According to the editor, "the question raised by 'Self-glorification' was not merely, if it is possible to treat

patients at an average time of much less than five minutes per attendance, but—and here is the rub—if it is likely that three-fourths of the patients, treated in so perfunctory a manner, would benefit by the treatment.”

Now any one who reads the letter of “Self-glorification” will see whether it is the generous-hearted European or the Editor who has missed the points raised therein, whether, in other words, the editor’s version of the point at issue is a fair and correct one. “Self-glorification” raised two distinct points: One was that to attend to the mass of diseased humanity represented by 113 patients in much less than 10 hours’ time was a physical impossibility,—a miracle; the other was that it was equally a miracle that three-fourths of that number was benefited. It was to the first that the generous-hearted European bore his testimony. Fortunately we have the advantage of a second letter from this gentleman, published by the editor in his generosity, and, according to himself, no doubt against his sound judgment. It is evident from this letter what the purport of the first was, and let any one honestly say if this (the first letter) was or was not a reply to the first point raised by “Self-glorification.” The number of daily attendance at the Dispensary was to him a fact, it having come under his observation on several and different occasions; he saw the fact questioned in a leading daily paper; he thought it his duty to disabuse the public of the insinuation; he accordingly wrote to the paper itself contradicting the correspondent who did so, and how does the editor treat the letter? While he had no hesitation to insert a letter evidently from one who had never been at our Dispensary, a letter which gave the lie to a brother journalist, he had no hesitation, following the dictates of his “better judgment,” and in the exercise of his “editorial rights, privileges, usages and immunities,” to keep back a letter coming from an eye-witness. And who will dare say that this was suppression?

It was not the business of “A European,” indeed, it was beyond his province, to inquire what proportion of the number that attended, derived benefit from the treatment they received. It was equally beyond his province as a layman, as he very justly says, to attempt to inquire whether the patients were duly and properly, or only perfunctorily, attended to. And because he did not do so, because, for the best of reasons, namely, his own incompetency, he did not “rush in” and venture to offer his testimony on one of the points, therefore, in the opinion of the editor, his testimony on the other point must be rejected. And who will not say after this, that a Daniel is come to judgment!

It is not only the European gentleman who has, the editor *distinctly remembers*, “missed the point at issue—the fatal three-

fourths," but "strange to say," though we devoted no fewer than six pages of our journal to the defence of our statistics, we are said to "have heroically evaded this point of the question too." Can the editor lay his right hand upon his heart and say that he has made this statement after having read through the said six pages? The statement is a heroically incorrect one, and if it has been made *after* the editor had gone through our article, it becomes as heroically a misleading and malicious one. But we cannot believe that our august brother has penned a deliberate falsehood; we suspect he has been betrayed into the statement by an excess of faith in his informant, a quality of mind with which he seems to be richly endowed, and which he has been displaying so heroically of late. Now instead of evading the point, the fatal three-fourths, we devoted an entire paragraph in justification of it. We said that "the regularity with which the majority (we do not say all) of our old patients present themselves is remarkable, and it is this stability which enabled us to make the assertion that we did respecting the proportion that are benefited."

But the editor has his own very strong grounds for rejecting our assertion regarding the fatal, which means the benefited, three-fourths. Indeed, he finds us caught in our own trap. If we had contented ourselves with speaking of patients only from the city; then there would have been some plausibility for the assertion, and the editor, out of charity to us, might have given credence to it. But we were so blinded by the passion for self-glorification that we forgot to give the requisite plausibility to our statistics, which we could have done if we had abstained from speaking of patients from the remote mofussil. We were careless enough at the time we manufactured our fatal figures that there might be editors to whom, "known it was that patients, who come from remote distances for treatment, *must* be heavily-laden with disease, indeed!" the diagnosis of which *must* invariably be difficult, if not baffling, to those who have devoted their lives to that business, and the recovery from which under any system of treatment *must* be impossible. We are glad, we must confess, though so much the worse for us, to discover in our brother, or rather, "Father of the Press," such surpassing genius for medical speculation, in addition to his pre-eminent qualities as an editor with fearful rights, privileges, &c. &c. Well might we medicos tremble at the advent of such an *Æsculapius* amongst us, for our occupation is surely to be gone.

Has the editor, or his professional informant, never thought for a moment that it is not all patients coming from remote distances that must be heavily-laden with disease? that even if they were, it is not all such cases that are difficult of diagnosis and

treatment? It ought to be known to him, at least to one of his correspondents, that what to an old school practitioner may be a formidable, because an incurable, disease under his system, to the merest tyro in homœopathy it may be perfectly amenable to a cure. A man may come from a very remote distance, having baffled the skill of all orthodox physicians he could have access to, with his dyspeptic symptoms, and yet he may get well in a short time under one who knows even the very elements of homœopathy. Similarly, patients may come heavily-laden with piles, with malarious enlargements of the spleen and liver, with long-lasting neuralgias, colic, and a host of other diseases, needless to be named here, and they may all, at least three-fourths of them, get well under a few ordinary homœopathic medicines, which do not require much skill to select. And would it be nothing short of a false statement, or nothing short of self-glorification, to say that they are benefited?

It is to see extended to the really poor of suffering humanity, the benefits of a system of medicine which we in our heart of hearts believe to the highest point yet reached in the domain of therapeutics,—a system which has disarmed therapeutics of all the horrors which the ingenuity of man could devise, and made it, as its name imports, a truly *healing* art,—a system which has rendered curable a great many diseases which are yet looked upon as incurable, and which has robbed the really incurable diseases of their terrors and tortures,—it is to see the benefits of such a system placed within reach of the poor, that we ventured to propose the establishment of a homœopathic hospital and dispensary in Calcutta, in support of which proposal we brought forward the statistics of attendance at our own humble out-door charity, as showing the growing demand for homœopathic treatment. The dispensary and its records are open to the inspection and watchful and scrutinizing examination of any one who will choose to take the trouble, and honor us with a visit of a morning. And if then we are found guilty of having attempted to hoax the public with manufactured statistics let us be condemned in no measured terms, and exposed to ridicule and shame. But if it be found that we have given the truth, the whole truth, and nothing but the truth, then our prayer is—cease, brother editor, from your revilings, and treat us fairly and honestly. If, as you say, you have really “no special prejudices on medical theories and systems,” if you have ever derived benefit from the system we advocate, then use your powerful pen and your mighty influence in its advocacy, and we will forget and forgive the wrong you have done us, and then you will “see whether those who had just established a Science Association were likely to confer upon the city an additional boon in the

shape of a hospital and a dispensary." By the way, in thus having a fling at "those who have founded the Science Association," you unconsciously wrong yourself, in as much as by your generous advocacy of the scheme when it was first put forth, you had necessarily identified yourself with "those" you now ridicule, and I must here, as I do always in my heart, give you my best thanks for so much, though latterly, when the scheme was taking and did take shape, you have not, under influences and motives best known to yourself, been giving it your former sympathy and support. To return: And then, that is, when the hospital, with an out-door dispensary attached, will have become an accomplished fact, nothing will gladden us more than to see your professional correspondent, notwithstanding his inexplicable and unexampled antipathy towards us, installed as its first physician. For we must candidly admit that having come from the father-land of homœopathy, and having undoubtedly had a European medical education and earned a well-merited doctor's degree, he will have claims to the post superior to those of all homœopathic practitioners here, native and European.

We are perfectly aware of our own shortcomings and unworthiness as practitioner, and still more as champion, of homœopathy; and it was to emancipate its reputation from these drawbacks and unfavorable circumstances that we attempted to give proofs, as far as available to ourselves, of the necessity of its recognition by the public. In this attempt some of your correspondents and yourself have seen only a glaring instance of self-glorification and of something worse, which are said to be characteristic of our nationality. In all sincerity we say we are not sorry for this as affecting ourselves; but we shall be very sorry indeed if this will in any way affect the progress of homœopathy.

Acknowledgment.

Datta's Homœopathic Series in Bengalee. Nos. I, II, III, IV, V & VI. Calcutta. 1876.

CLINICAL RECORD.

A Case of Double Quotidian Fever. Cured by Eucalyptus.

UNDER CARE OF AN L. M. S.

The patient, a Hindu girl, aged 13, had, according to the report of her brother, a medical student, an attack of malarious continued fever on the 28th of March 1876. On the 5th & 6th days of her disease, she had 40 grains of quinine given to her. On the 7th day the disease assumed the double quotidian form but without intermission. On the 8th day a European Surgeon saw the patient, and ordered 15 grains of quinine with 15 drops of tincture of cannabis indica to be given at each remission. On the 9th day one dose only of the tincture of cannabis indica with 18 grains of quinine was given. This produced both narcotism and cinchonism, and lowered the temperature from 103.5 to 99. But as the narcotism passed away, the temperature rose to 103°, and another dose of half the quantity was given, but without any effect. On the 10th and 11th days santonine followed by castor oil and turpentine produced no effect. Quinine was also given in the doses mentioned before, apparently with the effect of aggravating the disease. On the 12th, 13th and 14th days, sulphurous acid in one drachm dose followed by a "vegetable powder," prepared and sold by Dr. Ribton of Naples, which the European Surgeon said was a specific, was ordered every four hours, each dose containing 12 grains of the powder. The patient grew worse and presented the following symptoms when I saw her on the night of the 10th April, the 14th day of her disease:—temperature 105.6, pulse 160, gurgling noise on pressure over the cæcum; stool every four hours, loose and ochery coloured; mind not clear; thirst inordinate; and other symptoms of typhoid condition. As there had been too much of medication I kept the patient with out any medicine, in order that the real course of the disease might be made out. I gave her some unmedicated pills to soothe her friend's anxieties.

From the 16th to the 22nd day, *phos.*, *ars.*, *staphys.* were given with some beneficial result, but without cutting short any of the two paroxysms. On the 26th and 27th days, *puls.* 6 cut short one of the accessions, and on the 28th and 29th, *bell.* 6 removed the remaining, and she remained perfectly free from fever for eight days. But she was subject to relapses of fever and dysmenorrhœa at every full moon for the last 7 months; she got relapse of the fever on the 2nd day after full moon, the 3rd May. The fever was characterized by *heat with sweat*, and *hep. s.* 6, was prescribed accordingly. Four hours after the 2nd dose of the medicine the menstrual flux came on with unusual vigor, the discharge being very profuse and lasting for eight days, which had never been the case with her. From the 13th day, the following medicines, viz., *phos.* 6, *rhus.* 6, *nux.* vom. 6, *bell.* 6 and 30, and *acon.* 6, were given with no effect; the fever passed from the intermittent to the remittent form, and medicine was discontinued for 8 days.

28th May. Fever before noon and before midnight, preceded by chilliness; the fever was of the remittent type, thirst only during heat, burning sensation all over the body, especially the palms of the hands and soles of the feet; aching pain in the lower extremities; somewhat peevish during fever; bowels open once daily; skin harsh and dry; the spleen much enlarged, but not the liver; sleep very much disturbed by dreams; cough short and dry, but sometimes prolonged and distressing; respiration sometimes wheezing; percussion note normal, but auscultation revealed dry and moist crepitations here and there on the back. A dose of one grain of quinine with 5 minims of dilute nitro-muriatic acid was given. This seemed to act favourably; the fever came with less chilliness and ended with copious perspiration, which had not taken place for the last 12 days. But the effects did not continue.

29th. Percussion note of the chest clear, sonorous rhonchus and faint mucus râles in the whole of the inferior lobes of the right lung.

30th. Temperature 104.5°; respiration 28, the same sounds in the right lung as yesterday heard higher up. Ordered *bryo*. 6.

2nd June. Temperature 105.2; respiration 24; pulse 128; percussion note of both the sides of the chest not dull; both the lungs especially in front extending from the base to the apex abound with both sonorous and mucus râles, expectoration frothy and watery; sweat during sleep: appearance anæmic. *Fer*. 6.

3rd. Temperature 105°; respiration 28; pulse 140; heat with thirst preceded by chilliness; thirst only during heat; leucorrhœal discharge now and then; percussion note on both sides of the chest clear, except the left infra-axillary and right infra-mammary regions which elicit a dull sound. Auscultation:—Left side—the apex clear; the mammary region attended with sonorous rhonchus only, the infra-mammary abounds with sonorous rhonchus and mucus râles, the lower part of the axillary attended with slight sonorous rhonchus, the infra-axillary gives out an abundance of both sonorous and mucus râles, the scapular and the inter-scapular regions clear, the infra-scapular region attended with slight sonorous rhonchus and mucus râles. Right side—all the three regions in front more especially the infra-mammary abound with sibilant rhonchus and fine crepitation, the axillary clear, the infra-axillary attended with both the sounds named above, the scapular and the inter-scapular not much affected, but the infra-scapular copiously attended with sonorous and mucus râles; the heart sounds quite clear; appearance less anæmic than that of yesterday. Ordered tinct. ferri perchlor. 1 drop.

4th. Temperature 99.4°. No perspiration to-day, there being no sleep. Ordered a grain of ferrum carb. with a grain of quinine and 10 grains of potass bicarb.

6th. Copious perspiration during sleep only, chilliness with heat commencing in the head, with hands and feet cold, chilliness commencing in the back. *Sulph*. 30.

9th. The spleen much reduced; lower extremities below the knees, and the upper, below the elbows, cold; temperature 103.°
Stramonium 6.

10th. Temperature 100·8°. Perspiring profusely but the perspiration does not appear to have any effect in reducing the temperature this time ; does not like to be uncovered, although perspiring ; extremities cold ; all the regions of the chest giving out healthy vesicular murmurs, except the right and the left infra-scapular regions which present very slight sonorous rhonchi here and there. *Stramonium* 6 continued.

11th. Chilliness commencing in the back, heat in the head with hands and feet cold ; heat, then chill, then heat. *Sulph.* 6.

13th. Has been perspiring profusely during sleep, the perspiration emitting a strong ammoniacal smell. *Acid nitric* 6.

14th. The fever came on with its usual symptoms and left with a copious sweat, emitting a musty urinous smell.

15th. The same as before. No improvement at all. Medicine discontinued for a week.

23rd. The same as before, no amendment whatever, rather worse, has got diarrhœa, spleen much enlarged, coughs now and often, but nothing could be made out by examining the chest, reduced to a skeleton, cannot sit up on her bed, very anæmic, perspiration copious during sleep (or more properly, perspires if she falls asleep during the defervescence of heat, which is generally the case with her), other symptoms, described before, were all present.

The good results, which I had with eucalyptus globulus in some similar cases, some of which are reported in the pages of this Journal, led me to prescribe this drug in this case, in 15 drops doses of the liquid extract, every 4 hours. The dose was raised to 20 drops within a week, within which time, the fever with all its attendant symptoms, enumerated before, left the patient. She is now (23rd September 1876) free from all disease, and has recovered her usual health.

Remarks.

So far as my limited experience goes, the Eucalyptus seems to be useful in cases characterized by asthemia,—great exhaustion from continuance of the disease. It has yet to be determined if it will be found useful in cases which were not previously treated with quinine. In all the cases I had tried it, quinine was used before its use was commenced.

Gleanings from Contemporary Literature.

ON THE SIZE OF THE DOSE OF HOMŒOPATHIC MEDICINES.*

By Dr. H. G. SCHNEIDER, of Magdeburg.

THE size of the dose of homœopathic medicines has ever been a subject of contention among homœopathic physicians. Hahnemann himself tried the homœopathic medicines from small undiluted doses, led by his theories of cure and of psora, up to the decillionth dilution in a few globules the size of a poppy seed, and stopped at the last-named dose, but he praised Korsakoff who went far beyond this dose.

Theory was gray, and judgment in medical practice is difficult. Hahnemann's followers, therefore, have no definite fixed views regarding the size of the doses of homœopathic medicines, and hence, according to their knowledge or I should rather say their belief, they are divided into macroposists, microposists, and a middle party who consider the doses of the macroposists too large, and those of the microposists too small, and an eclectic party who make use of the whole pathological scale from the crude drug to the 20,000th high potency.

On the other hand, our allopathic brethren are at peace on the subject of the doses.

If we inquire into the reason of this striking difference, we find that it is owing to this : that allopathic doctors know what their medicines ought to do when used for curative purposes, whereas homœopathic doctors do not.

The medicines of the allopaths ought to cure, according to the axiom *contraria contrariis*, by directly removing the ailments of their patients ; they should warm, cool, excite, soothe, relieve pain, give appetite, improve digestion, remove catarrh, stop diarrhœa, open the bowels, increase the urinary secretion, restore the menses, check bleeding, supply the want of blood and iron in the system, soften indurations, disperse tumours, promote the absorption of exudations, they should act as antipyretics, antiphlogistics, antiseptics, antiscorbutics, antiarthritics, antisymphilitics, &c.

The well-recognised posological maxim of the allopaths runs as follows : *Give of the antipathic medicine as much as will suffice to do what is required.*

The remedies of the homœopaths should also, according to the *similia similibus*, restore health to patients by directly removing their ailments ; indeed, they ought to be the sole means of restoring health. But how they ought to do so no one has attempted to show because (as will presently be seen) the impossible cannot be established.

Practically homœopathic physicians know only from their practice that small doses of homœopathic medicines are able to make sick persons well. There is no evidence to enable them to decide how large or how small the

doses of these medicines should be in order to cure their patients, whereas allopathic doctors can show every day that antipathic medicines act antipathically. Hence the splitting up of homœopathic practitioners into parties, and the unanimity of allopathic practitioners on the dose question.

Homœopathic physicians, in common with the laity and allopathic doctors, hold the error which arose thousands of years since with the art of medicine, and which to-day remains inseparably connected with it. The error we allude to is that, contrary to the law of causation, it is thought possible to bring a disease to a termination without the absolute separation of the morbid cause from its effect, by the absolute removal of the morbid cause from its effect, or by its annihilation, and the restoration to health of the patient by the destruction of the action of the cause of his disease, which can only be compassed by the destruction of its effect. An example will show clearly this error.

A bell lets its sound be heard as often as its clapper sets it vibrating. Its sound becomes dull, or even inaudible, in proportion as its clapper has its motive power overpowered by being covered up, or the vibrations of the bell obstructed by being covered up. But the bell's sound is again heard as before when, after removal of the deadening coverings, the clapper can again strike it. It is only by removal of the clapper from the bell or by the cracking of the bell that an end can be put to its sounding on the action of the clapper.

• Hence it follows that the theory of the allopaths, which considers their practical palliative treatment as a radical treatment, is false, and that homœopaths have no theory.

If by having a theory is understood a "scientific foundation," then the allopaths are quite right when they say allopathy has a scientific foundation and homœopathy has nothing of the sort, but they are wrong when they assert that their theory is a truth.

The cure of a patient is impossible without the absolute removal of the cause of his disease from its effect.

The suppression of the variability of the effect of the morbid cause by the same and direct removal of the symptoms can, like the diminution of the active power and the rendering of the morbid cause powerless, only be followed by apparent health as long as it lasts; and the annihilation of the action of the morbid cause is only capable of being compassed by the annihilation of its effect, which results not in cure, but in its opposite.

What is absolutely required in every case is the absolute removal of the morbid cause.

By medical art it is only mechanical morbid causes that can be *immediately* removed from the sphere of the organism, and in the organism only chemical morbid causes can be annihilated; these consist of known poisons for which chemical antidotes can be used. All other mechanical and chemical morbid causes removable from the sphere of the organism can only be removed from it by the appropriate negatively reintegrating activities of the organism.

With regard to these not directly removable chemical morbid causes there is nothing for the medical art to do but to bring into action or to assist the appropriate negatively reintegrating activities of the organism, in other words, to promote spontaneous cure.

If medicines are to bring about the spontaneous cure of diseases produced by toxical cause, the only way in which they can and do effect this is by the calling forth or assisting the negatively reintegrating activities of the organism appropriate to the actual toxical morbid cause.

Homœopathic medicines effect cures of diseases from toxical cause. (I shall presently adduce a case of this sort which gives a striking proof of this.)

Consequently they do this by calling forth or assisting the negatively reintegrating activities of the organism appropriate to the actual toxical morbid cause.

If this is correct, then the law of the dose of the homœopathic medicines is discovered, and it is as follows :—*Give of the homœopathic medicine as much as will suffice to call forth or assist the negatively reintegrating activities of the organism which remove the toxical morbid cause in its blood out of its sphere.*

Larger doses of the homœopathic medicine render it, in place of a remedy an obstacle to the cure, for in such doses it no longer opens the ways out of the organism for the toxical morbid cause, but as *simile* occupies these ways for itself.

In still larger doses the homœopathic medicine is not only an obstacle to the cure, but is itself a toxical morbid cause which complicates its injurious action with that of the toxical morbid cause already present.

Doses of the homœopathic medicine which are too small to render it a remedy, undoubtedly pass through the organism without doing anything.

But the limit of the too-little is widely separated from the limit of the too-much, and can only with certainty be ascertained in those rare diseases which from their nature cannot recover or take a long time to recover without the interference of the medical art. In other cases it cannot be ascertained, because in all diseases in which medicines are capable of being remedies the cure in the end is always spontaneous.

Hence, in these diseases it will be long before the question of high potencies can be satisfactorily answered.

The relation just described is observed in no disease more distinctly and decidedly than in syphilis.

Syphilis is undoubtedly and undeniably a disease the cause of which is an unknown poison in the blood not destructible by chemical antidotes.

The removal of the syphilitic poison out of the blood and out of the sphere of the organism by the negatively reintegrating activities of the latter is therefore indispensably requisite for the cure of syphilis.

Those allopathic physicians, however, are wrong who (contrary to v. Baerensprung) maintain that syphilis is not spontaneously curable, not curable by the negatively reintegrating activity of the organism, but that

it can only be cured by antisymphilitica which alter the constitution of the patient.

Syphilis is always cured spontaneously, even though this happens not without the help of the medical art. Without the interference of the medical art it, with few exceptions, is cured spontaneously in the first periods of infection, when it appears under the form of soft chancre and painful bubo.

Hence the allopaths consider primary syphilis with soft chancre as quite another disease essentially different from syphilis.* They even hold it to be a purely local contagious disease. But in this they are wrong, for primary syphilis coming on in this way is cured spontaneously without medical aid, because there is a normal reaction against the syphilitic virus, which not being interfered with removes the poison completely out of the blood and out of the sphere of the organism in three to four weeks, as a rule. This occurs in the case of the soft chancre and painful bubo.

Syphilis occurring with hard chancre is also cured without medical aid in the last period of infection of its natural course. When its course is uninterfered with, this syphilis is neither a fatal disease nor a disease that only terminates with life.

But syphilis is not cured without medical aid in the first period of infection, when it comes on with hard chancre and indolent buboes and induration of the lymphatic glands; because, as its symptoms indicate, there is a deficient normal reaction against the syphilitic virus, and this is consequently not completely removed from the sphere of the organism, but not because primary syphilis with hard chancre is an essentially different disease from that with soft chancre.

Nor is syphilis cured with medical aid in the periods of infection between the first and the last, because the negatively reintegrating activity of the organism is incapable of removing completely from its sphere the mass of the syphilitic poison.

In both cases a new period of infection occurs as soon as the relations in the organism allow the portion of syphilitic contagion remaining in it to infect it anew.

Antisyphilitic treatment pursued with skill and moderation by allopaths do not confessedly alter this relation.

C. F. Kuntze says, in his *Text-book of Practical Medicine*, vol. ii, p. 242: *Syphilis is cured in successive shocks even in the best treatment and when the patient is in the most favourable circumstances.*

But allopathic mercurial treatments pursued without prudent moderation increase and aggravate the periods of infection, hence they lengthen the course of disease and eventually endanger the patient's life. Some years ago I had a patient under my treatment who had been treated allopathically for twenty years, and was in danger of dying of laryngosyphilis.

* At the discussion on Syphilis at the Pathological Society of London this year, all the speakers rejected the former doctrine of a duality of syphilitic poisons.—(*Edu. Brit. Journ. Hom.*)

So also homœopathic doses of mercury, too large to promote the curative activity of the organism, which some homœopathic practitioners consider necessary for the eradication of syphilis, do not contribute to the cure of syphilis, that comes on with hard chancre and indolent buboes—*Exempla sunt odiosa*.

The unfortunate delusion that the extirpation of the disease is the curative indication is to blame for this.

The symptoms of syphilis are phenomena of the effects of the syphilitic poison localised from the blood, and are indubitably manifestations of the negatively reintegrating activity of the organism; they are consequently not really symptoms of disease but symptoms of cure, in so far as the removal of the syphilitic poison out of the sphere of the organism is connected therewith, as it is with all the symptoms in the first and second periods of infection.

The folly of making the annihilation of these curative symptoms of syphilis the object of treatment is, one would suppose, self-evident.

From the facts here adduced it is evident that the remedial medicine, *Mercury*, in doses beyond those sufficient to promote the curative activity of the organism, does not cure the syphilis, but becomes injurious in proportion to the excess of the doses.

That the doses of the homœopathic medicine are too small to render it a curative means in syphilis may be known with certainty from this circumstance when they allow the first period of infection and the periods of infection betwixt the first and the last to run a natural course, i. e., uncured by the aid of art. I have had under treatment some syphilitics in the second period of infection who had been treated by homœopathic physicians with one or two small powders per week. A trial of the high-potencies would be decisive as to their value.

Finally, that sufficient doses of the homœopathic medicine of *Mercurius solubilis* and *Acidum nitricum* really cure syphilis in the first period of infection and the periods of infection betwixt the first and last, I have since 1846, as my case-book shows, been able to convince myself conclusively, in more than a thousand cases in the first period of infection, and in more than three thousand cases of the periods of infection betwixt the first and last.

Of those treated by me in the first period of infection at most 2 per cent. have gone into the second period of infection, and these generally in the fourth and fifth week of the first period, and of those which remained under my treatment in the other periods of infection, none have gone into the further periods of infection.

From the 3rd decimal trituration of *Merc. sol.* procured by me upwards of forty years ago from Gruner in Dresden I make a 4th dilution, and from this a 5th dilution, and with these I medicate globules, of which I give eight every night and morning. In like manner I gave every night and morning *Acid. nit.* in globules. Only exceptionally have I found it necessary to give *Merc. precip. rub.* 1st trituration in small doses in bad

cases ; for example, in deep chancres of the glans in the first period of infection.—*The British Journal of Homœopathy*, July 1876.

A CASE OF POISONING WITH COPAIBA.

By Dr. W. A. KENNEDY.

J. McK., aged 22 years, single, called me on May 22nd, 1876, and gave the following history :—

Three weeks ago contracted a first gonorrhœa, for which he used injections of sulphate of zinc. These arrested the discharge for a time, but it returned, and he began to take the oil of copaiba. On the 19th he took two table-spoonfuls of the pure oil, besides having taken one table-spoonful on two or three days previously. After each dose he was sick, and vomited a little.

On the 20th the discharge stopped ; he had a rigor, and noticed his face swollen and red. Went to business without taking food.

On the 21st he had great thirst, nausea, vomiting, complete anorexia, restlessness, with increase of swelling and redness of face. The arms and legs, and finally the body, became red and swollen.

When seen I found the whole body œdematous—face dusky yellowish-red colour ; œdema worst about eyelids, which could not be opened ; some sticky discharge at margins of eyelids ; surface of skin of face and neck raised rather like measles. This is more observable where the raised eruption terminates, next the hair and at lower parts of neck. Over the body is a darkly-reddish smooth eruption, studded with innumerable points of a deeper colour scattered over the surface. The hands and feet somewhat resembled the face in appearance. The throat is inflamed, of a dusky redness, with œdema of uvula ; no difficulty in swallowing. He complains of feeling very ill ; he is sick and restless, and had no sleep, but tossed about all night. No pain complained of ; no difficulty with the urine, which is rather dark in colour, without deposit. Still intense thirst ; tongue very foul, yellowish-white thick fur ; bowels not moved for two days.

Morning temp. 104° ; pulse 140, small and thready. In the evening, temp. 103° ; pulse 130 ; stronger.

Complains of his head going round during day, and of slight sore throat ; thirst less ; has taken a little food ; felt sick, and retched after it, but retained what he took ; the penis is œdematous ; no pain in micturition ; bowels moved slightly ; has taken 3j. of brandy every two hours.

Acon. 1, and *bell.* 1, afterwards *acon.* 1, and *rhûs. tox.* 1, during the day.

May 23rd. Eruption is fading, with less œdema ; eyelids can be opened, showing conjunctivitis with smarting, and copious (slightly purulent) discharge ; small vesicles, like sudamina, with more opaque contents, began to appear last night over face, hands, and feet ; feels better ; not so much nausea ; slept a little ; not so restless ; nor thirsty ; there is slight discharge from penis ; tongue cleaning ; bowels moved.

Temp. $101^{\circ}6'$; pulse 108 ; stronger. To discontinue brandy. Cont. med. In the evening, temp. $102^{\circ}2'$; pulse 100.

Increase of vesicular eruption, which is now more general ; small amount of desquamation ; the throat still feels swollen, but not sore ; urine examined, but nothing abnormal found.

May 24th. Edema much less ; back of hands covered with vesicular eruption, the vesicles being large and broad, and filled with pus ; vesicles on other parts, drying up and disappearing ; rash now mostly on legs, of rather a bright hue ; complains of eyes smarting ; photophobia and lachrymation very great ; on looking into eyes, slight erosions of the conjunctiva seem to have occurred ; has slept well ; swelling of penis less ; throat better ; taking more food ; tongue cleaner ; bowels moved.

Morning temp. $100^{\circ}7'$; pulse 90 ; good. To have *bell. 1*, and *merc. corr. 1*, with *lot. zinc. sulph.* to eyes. In the evening, temp. $101^{\circ}4'$; pulse 100.

Eyes much the same ; tears very smarting ; thinks he may have rubbed them with a towel soiled with gonorrhoeal discharges, because he remembers that they smarted after using it.

May 25th. Has not slept during night from a short dry cough ; eruption still less ; vesicles drying and scaling off ; eyes better ; less lachrymation and smarting ; tongue cleaner ; bowels not moved. To discontinue lotion to eyes. Cont. med.

Temp. 99° ; pulse 82.

May 26th. Better in all respects ; epidermis desquamating generally ; has scratched epidermis off back of hands, leaving them sore ; eyes quite well ; cough better ; bowels not moved ; tongue quite clean ; appetite improving.

May 27th. Desquamation still going on, especially on hands, all eruption and rash gone ; in other respects convalescent.—*The Monthly Homoeopathic Review*, August 1876.

THE INDIAN DAILY NEWS ON THE STATISTICS OF
OUR OUT-DOOR DISPENSARY.

WE seem to have had the misfortune to have trodden unconsciously upon the toes of a brother editor in the exercise of our own editorial rights, privileges, usages and immunities. But in the present case, those immunities are denied to us in a certain form, and we are under grievous condemnation. Looking over the *Calcutta Journal of Medicine* for August, which reached us a few days ago, we found a considerable portion of the number occupied with a report of the proceedings of the inaugural meeting of the Indian Association for the cultivation of science, an institution which is said to have been originated in the journal, and its friends have every right to feel exultant in such success as they have attained. We next came upon some Further Considerations on the necessity for a Homœopathic Hospital and Dispensary in Calcutta. Having no special prejudices on medical theories and systems, and having some time back had our attention drawn to some cases of extraordinary success in the treatment of cholera on homœopathic principles by Mr. P. Carter, we looked over the paper to see whether those who had just established a Science Association were likely to confer upon the city an additional boon in the shape of a hospital and dispensary. Instead of finding that only, we found a considerable portion of the paper occupied with comments on some letters which had appeared in this paper, and the Editor of the journal adds a note which we will notice presently, after sweeping the course for it. In a previous number some considerations had been given, and amongst the rest, it was noted that Dr. Sircar's Dispensary, held at his house, was a wonderful success—numbers flocking to it, and being treated and cured, or let us say relieved. The *Patriot* noticed this; and some one again noticed the facts as set forth in the *Patriot*. He wrote a letter which appeared in our issue of 16th July; and he endeavoured to show that there was some drawing of the long bow in the statistics given. He pointed out that from the number of patients and the time devoted to them, it was a physical impossibility that so many cases could be duly attended to, and that the publication of statistics which, in his opinion, could not possibly be true, carried with it somewhat of the idea of self-glorification. This letter, if replied to at all, should have been replied to by the party responsible for the original statistics. About a week passed, another letter appeared, bearing the signature of a medical practitioner of the same school of medicine, which quoted statistics of the London Hospital, that showed far less favorable results than the statistics published here. Now comes the note which the Editor of the *Calcutta Journal of Medicine* has inserted in reference to ourselves:—

"We had a mind, after the appearance of L. Salzer, M. D.'s letter, to send a reply to the *News*, but we were deterred from doing so on being told by a generous-hearted European gentleman, that his correspondence, in reply to the insinuations of "Self-glorification," based upon what he had actually

agen of our out-door dispensary, was suppressed by the fair and "deservedly popular" Editor, though subsequently L. Salzer, M. D.'s letter, containing further insinuations, was admitted."

Dr. Sircar must have strange ideas of the duties of an editor, and a very crooked idea of fair play, to have written such a note. We knew that professional men are very sensitive, often even more sensitive than sensible, and the Doctor has strange notions of journalistic practice if he supposes that all and every letter that is not published is *suppressed* from a sense of fair play. When facts are in dispute between two parties, there is often a tendency for fools to rush in where angels fear to tread; and editors often bear that fact in mind, and try to keep the course clear and confine it to the parties to the strife as far as possible. Take, for instance, the case of Father Lafont's sermons on Masonry. We received scores of letters on it which we did not insert, because the writers either did not throw light on the subject, or held a very inferior candle to that of the Father, and some of his assailants. The same thing took place over the controversy on the personality of the devil, and in a score of cases. According to Dr. Sircar we *suppressed* these letters in foul play, by not inserting them. Dr. Sircar tells us that he "had a mind" to have written on the subject. Does not that fact alone imply that he was the proper party to have done so? And did we not show it by not admitting a letter which was no reply at all? We do not suppose that Dr. Sircar sets himself up as an angel, but he was evidently restrained by the wholesome fear of that class of beings, and *left the other* part to the "generous-hearted European." Now, what was the reply that was sent, that it should have preeminent claims to admission? Did it show that the alleged physical impossibility was possible? Did it demonstrate that a certain number of patients were properly attended to by an average of two or three minutes? Not at all. It alleged that the writer could support the statistics given, because on several occasions when he had been at the dispensary, there were many people there also. He did not perceive that one fact militated against another. If there were many people, there must necessarily have been less attention paid to each, and if there were fewer, the statement equally settles the other question. Another reason why the letter alluded to by the Editor of the *Calcutta Journal of Medicine*, as emanating from "a generous-hearted European gentleman," did not appear in our columns is this—that the correspondent had evidently missed the point at issue. For the question raised by "Self-glorification" was not merely, if it is possible to, treat patients at an average time of much less than five minutes per attendance, but—and here is the rub—if it is likely that three-fourths of the patients, treated in so perfunctory a manner, would benefit by the treatment, especially when the patients are made of such stuff as Dr. Sircar describes them to be, namely, patients not only from the city and the suburbs but in no "small number from the remote mofussil"—known, as it is, that patients who come from remote distances for treatment must be heavily laden with disease, indeed.

Now, the generous-hearted European gentleman has, as we distinctly remember entirely missed that point, the fatal three-fourths : and, strange to say, the Editor himself, who devotes no fewer than six pages of his journal to the defence of his statistics, heroically evades this point of the question too. Moreover, if the correspondent had seen twice the number of people present, it would have been no proof that three-fourths of them were cured or relieved. We still hold that Dr. Sircar has not yet justified his statistics. Generosity of heart is no guarantee of soundness of judgment, and because we saved a "generous-hearted European" from making himself ridiculous by a lame defence, we are denounced as unfair and censured for "suppressing" letters. If Dr. Sircar has any reasonable reply to any letter that appears in our columns, he knows perfectly well that they are always open to him or to any one else who has facts worth stating, and who knows how to state them. We may have our prejudices as other people have : but no one can honestly show that we ever let them interfere with the fair expression of adverse opinions.—*The Indian Daily News*, Sept. 15, 1876.

HOMŒOPATHIC STATISTICS.

TO THE EDITOR OF THE INDIAN DAILY NEWS.

SIR,—As there have of late appeared various letters in the correspondence columns of the *Indian Daily News*, about the homœopathic treatment of cholera and its wonderful results, it would be of no little benefit to a certain class of your readers, to further enlighten them about the subject of homœopathy in general by laying before them the following extract from your worthy contemporary, the *Hindoo Patriot* of yesterday's date :—

"We hail with pleasure the re-appearance of that unpretending but useful little journal, the *Calcutta Journal of Medicine*, edited by Dr. Mahendra Lal Sircar. Single-handed, and burdened with heavy professional engagements both in-door and out-door, not to mention of other occupations, he finds scant time to carry on the *Journal*, and we are not therefore surprised that he falls into arrears. The generous public, we make no doubt, will overlook his shortcomings in this respect. The present number of the *Journal* contains an important article, shewing the necessity of establishing a Homœopathic Hospital in Calcutta. Dr. Sircar maintains a Homœopathic Dispensary in his own house, at which he treats all patients free of charge. The following statement shews the attendance at this Dispensary :—

	1874.	1875.
Hindoos	26,543	29,089
Mahomedans	8,362	10,401
Christians	1,581	1,935
Total	36,386	41,425

"These figures not only shew the active service which Dr. Sircar is rendering to the cause of humanity, but also the increasing popularity of the homœopathic system in Calcutta. Dr. Sircar remarks :—

“We are certain that if we had a steady organization—a paid establishment, and if we had time and health to enable us to devote due attention to the existing demand for homœopathic treatment, that demand would have been indicated by much larger figures than are shown in the above tables. It is not only from the city and the suburbs, but in no small numbers from the remote mofussil, that patients come to us for treatment. And when we say that at least three-fourths of this number are benefited by such treatment, we are within and not outside the limits of fact. Such being the case, it is the duty of the community to see that the benefits of the system are extended as much as possible.”

Now 14,425 patients treated in one year—gives a daily average of 113 cases, and, taken 5 minutes as the average time required for one patient, it would require about 10 hours daily to attend to this mass of diseased humanity. Who can say, after this, that homœopathy does not perform wonders!—But the miracle does not end here; for we are gravely told by the famous doctor that at least three-fourths of this “number (that is 30,318) are benefited by such treatment.” And yet the *Journal*, which thus trumpets the editor’s own famous doings, is characterised by your friend the *Hindoo Patriot* as so “unpretending!” Of course all this is merely done for the sake of science and humanity, for the sake of truth, which means, or ought to mean, the whole truth and nothing but the truth.

If we closely watch the proceedings of a certain class of would-be leading men in our midst, we learn best how some of our forefathers succeeded so well in having themselves handed down to posterity as gods, heroes, &c., &c. You need only for that purpose, . . . well, Dr. Mohendra Lal Sircar knows best what is needed. Yours, &c.,

SELF-GLORIFICATION.

—*The Indian Daily News*, 16th August 1876.

THE SAME.

SIR,—With reference to a letter in your impression of the 16th instant in which the writer “Self-glorification” attempts to throw doubts upon homœopathic statistics in general, on the ground of certain statistics published by a homœopathic practitioner of this city, I beg leave to lay before your readers the statistical results of the London Homœopathic Hospital in the year 1872, as derived from the the Homœopathic Directory of Great Britain and Ireland for the year 1874. From this directory it is to be seen that the number of in-patients in 1872 amounted to 529. Leaving aside the classification of diseases as irrelevant for the present purpose, the clinical results are summarised as follows :—

Cured.	Much improved.	Relieved.	Not improved.	Dead.	Under treatment.	Total.
182	97	132	48	14	56	529

As to out-patients their number in the same year amounted to 6,925 ; they had been attended by no fewer than ten medical officers, who divided the dispensary work amongst themselves, according to their respective specialities (Dr. Drury Diseases of Children : Dr. Leadam Diseases of Women, &c.) The hospital authorities, as you will observe, Mr. Editor, from the directory which I send along with this letter, do not venture to draw any statistical conclusion as to relief or cure with regard to out-patients, known as it is that this class of patients are too unstable in their attendance, &c., as to offer any reliable ground for statistical data. The London Homœopathic Hospital authorities, therefore, rightly apply their statistical figures to in-patients only—a class of patients which are under medical observation from beginning to end.

When I say that a somewhat similar arrangement obtains in all authenticated homœopathic institutions in Europe and America, I hope your correspondent "Self-glorification" will do me the justice to confess that homœopathic statistics in general are free from all the charges brought by him against the statistics which have been published at Calcutta in the year 1876.—Yours, &c.,

21st August, 1876.

L. SALZER, M. D.

—*The Indian Daily News*, 22nd August 1876.

DR. SIRCAR'S DISPENSARY.

TO THE EDITOR OF THE INDIAN DAILY NEWS.

SIR,—Referring to your editorial in to-day's issue, animadverting upon some remarks in the *Calcutta Journal of Medicine* in which reference is made to the non-appearance in your columns of a letter of mine concerning the number of patients attending Dr. Sircar's Homœopathic Dispensary, I think, after the pounding you have given the "Generous European," I have a fair claim to say, "strike, but hear."


I have not a copy of my letter by me, but I am sure you can bear me out in stating that it made no pretension to be a reply to the statements or conclusions of "Self-glorification," it merely gave the impressions of an eye-witness as to the number attending daily for homœopathic treatment at Dr. Sircar's Dispensary—as "Self-glorification" implied that 100 patients

or so could not possibly be treated with due attention by the doctor and his assistants? To the question, "How can these things be," I made no attempt to reply because as a layman, and one having no knowledge of the art of healing, I could have nothing to say on the subject; but, in support of the doctor's statistics, *viz.*, that about one hundred patients were under daily treatment, my testimony, as an eye-witness, was offered on the old but correct rule of evidence laid down by one of whom it is written that "never man spake like this man," *viz.*, we speak what we do know and testify that we have seen—with a desire not to combat theoretical deductions but to assert facts—what you considered to be the point at issue, and what would be so had Dr. Sircar taken up the question, was not overlooked by me; but, in my judgment, the serious consideration was the insinuation of *cooked statistics* thrown out in the letter of "Self-glorification," branding one of the ablest and one of the most conscientious of our native citizens with infamy, in having come before the public, in his capacity as a professional man and as an editor of a professional journal, with a lie in his right hand. It was from this stand-point that I had hoped to disabuse the public, through the *Indian Daily News*, to state what I knew to be truth, so far as it went; and, I would prefer being counted a fool in such a position than an angel who, under such circumstances, would stand aloof.

I must, however, say that I never for a moment attributed the non-appearance of the letter to anything but an accident, or to your own better judgment, and when mentioning the circumstance to Dr. Sircar, I gave this as my opinion to account for, not the suppression, but the non-appearance of the letter in question.—Yours, &c.,

Calcutta, 15th September, 1876.

A EUROPEAN.

 We reproduced Dr. Sircar's note as printed in his own journal, italics, quotation marks and everything. We do not for a moment hold "A European" responsible for the note; but its meaning cannot be mistaken. As to "European" we know that he is a "brick" in his way: but he might perhaps at times with advantage rather take the part of a timorous angel than of Don Quixote.—Ed., *I. D. N.*

—*The Indian Daily News*, 16th September 1876.

चरकसंहिता ।

सत्रस्थानम् ।

सप्तमोऽध्यायः ।

न वेगान्वा रक्षीयोऽध्यायः ॥ ७ ॥

अथातो न वेगान्वा रक्षीयमध्यायं व्याख्यास्यामः ॥

इतिह स्थाह भगवानाम्नेवः ॥ १ ॥

न वेगान्वा रक्षीमान् जातान्मूलपुरीषयोः ।

न देतसो न वातस्य न वन्धाः श्वयो न च ॥ २ ॥

नोष्णारस्य न जृम्भाय । न वेगान् शुत्पिपासयोः ।

न वायस्य न निद्राय । निम्बासस्य अमेण च ॥ ३ ॥

एतान्वा रक्षतो जातान् वेगान्नो ना भवन्ति ये ।

येनैव दृढक् चिकित्सीयं तन्मे निगदतः शृणु ॥ ४ ॥

CHARAKA SANHITA.

CHAP. 7. SHARVIRECHANA SATA'SRITYA.

1. And now I shall treat of the Chapter called navegān-dhāranīya, thus said the venerable A'treya.

2. The intelligent should not suppress the urgings of micturition, of defæcation, of discharge of semen, of flatus, of vomiting, of sneezing ;

3. Nor of eructations, of yawning, of hunger, of thirst, of lachrymation, of sleep, of panting from fatigue.

4. Listen, and, for the purpose of treatment, I shall speak separately of the disorders that arise from the suppression of these urgings.

वसिमेहनयोः शूलं मूलरुचं शिरोरुजा ।

विनालो वङ्गपानाहः स्नात्तिष्ठं चूलनिग्रहे ॥ ५ ॥

स्वेदावगाहनाभ्यङ्गान् सर्पिषश्चावपीडनम् ।

शूले प्रतिहते कुर्वात्तुविचं वसिकर्म च ॥ ६ ॥

पक्वाययसिः शूलं वातवर्ज्योनिरोधनम् ।

पिण्डकोष्ठेष्टनाभानं पुरीषे स्नाद्विचारिते ॥ ७ ॥

स्वेदाभ्यङ्गावगाहश्च वर्ज्यो वसिकर्म च ।

हितं प्रतिहते वर्ज्यस्नानं प्रभायि च ॥ ८ ॥

मेद्वे दृष्ययोः शूलमङ्गमर्हो हृदि व्यथा ।

भवेत् प्रतिहते शूले विवर्द्धं चूलमेव च ॥ ९ ॥

5. The suppression of the urging to urinate gives rise to pain in the bladder and urethra, to dysuria, to headache, to bending of the body, to tensive pain in the groins.

6. In retention of urine, fomentations, bathing, rubbing of oil, administration of ghee in excess (by the mouth), and the three kinds of injections should be had recourse to.

7. The suppression of the urging to stool gives rise to pain in the intestines, headache, retention of flatus and stool, cramps in the calves, and tympanites.

8. In suppression of the urging to stool, fomentation, rubbing of oil, bathing, clyster, injections, and administration of such foods and drinks as loosen the fæces, are useful.

9. The suppression of seminal discharge gives rise to pain in the penis and testes, pains of the body in general, pain in the heart, and retention of urine.

६ शयपीडकनिवि ॥ नटवस्तः पाठः ॥

७ वातवर्ज्योऽप्रवक्तनं विजपि पाठः ॥

तलाभ्यङ्गान्वाहश्च भद्रः। चरणाबुधः ।
 यातिः पयोनिहश्च यस्तं भैयुनमेव च ॥ १० ॥
 वातजलेपुरीषाणां सङ्गाधानं क्षयी रजा ।
 जठरे वातजाश्चान्ये रोगाः स्युर्वातनिग्रहात् ॥ ११ ॥
 स्नेहस्नेदविचिक्षालवर्तयोभोजनानि च ।
 यानीनि पक्षयश्चैव यस्तं वातानुलोभनम् ॥ १२ ॥
 काण्डूकोठाक्षिर्व्यङ्गशोथपाण्डूभयम्बराः ।
 कुष्ठश्चक्ष्मासर्पिषर्प्याङ्गिर्निग्रहजा गदाः ॥ १३ ॥
 भुक्त्वा प्रच्छर्दनं घृमो लङ्घनं रक्तभोजनम् ।
 रुक्षान्वाधानं व्यायामो विरेकश्चाले यस्यते ॥ १४ ॥

10. In such cases rubbing of oil, bathing, wines, fowl, *śali* rice, milk, injections, and coition are useful.

11. The suppression of the urging to expulsion of flatus gives rise to incarceration of flatulence, stool and urine, to tympanites, to weariness (as from exhaustion), to pains in the bowels, and to other disorders from wind.

12. In such cases oily fomentations, clysters, and such foods, drinks, and injections as are calculated to expel the wind, are useful.

13. The suppression of the urging to vomiting gives rise to the following disorders,—Itching, ring-worm, anorexia, patches of discoloration in the face, dropsy, anæmia, fever, leprosy, hiccough, erysipelas.

14. In such cases vomiting after having taken food, inhalation of smoke, starvation, bleeding, use of unctuous food and drink, exercise, and purgation, are useful.

मग्नास्यः शिरःशूलमर्दिताङ्गवभेदयो ।

इन्द्रियानाञ्च दौर्बल्यं क्षयोः स्नाद्विचारयात् ॥ १५ ॥

तलोर्ध्वगतुकोऽम्बुः स्वेदो घ्नः सनावनः ।

हितं वातघ्ननाद्यश्च हतयोत्तरभक्तिकम् ॥ १६ ॥

द्विका काशोऽरुचिः क्षयो विवन्धो हृदयोरसोः ।

उन्मारविग्रहात्तल द्विकावास्तुल्यभौषधम् ॥ १७ ॥

विनामाक्षेपसङ्कोचाः क्षुत्तिः कम्पः प्रवेपनम् ।

जृम्भावा निग्रहात्तल सर्वं वातघ्नमौषधम् ॥ १८ ॥

कार्श्वदौर्बल्यवैवर्त्यमङ्गमर्होऽरुचिर्भ्रमः ।

शुद्धेननिग्रहात्तल स्निग्धोष्णं सधुभोजनम् ॥ १९ ॥

15. The suppression of the urging to sneezing gives rise to stiffness of the neck, headache, hemiplegia (or rather paralysis of the muscles of one side of the face and neck), hemicrania, weakness of the senses.

16. In such cases the rubbing with oil and fomentation of the parts above the clavicle, inhalation of smoke with snuff, the use of food that destroy wind, and of ghrita after food, are useful.

17. From suppression of eructations arise hiccough, cough, anorexia, shivering, constriction of the heart and chest. In such cases the remedy is the same as that for hiccough.

18. From suppression of yawning arise bending forwards of the body, convulsions, tonic spasms, numbness, shivering, tremor. In such cases the remedies that destroy wind should be used.

19. From suppression of hunger arise emaciation, debility, alteration of the natural hue of health, aching of the body,

कण्ठोश्मयोषो वाधिर्बन्धः श्वसो हृदि व्यथा । .

पिपासा निग्रहस्तत्र शीतं तर्पणमिच्छते ॥ २० ॥

प्रतिश्यावोऽक्षिरोगश्च हृद्रोगश्चाध्विर्बन्धः ।

वाय्वनिग्रहस्तत्र स्नानं मद्यं म्रिताः कषाः ॥ २१ ॥

जृम्भाक्लमर्हशान्द्राश्च क्षिरोरोगाक्षिगौरवम् ।

निद्राविधारस्तत्र स्नानः संवाहनाणि च ॥ २२ ॥

रुक्ताहृद्रोगसन्धोहाः अमनिःश्वासवोरथात् ।

जायन्ते तत्र वित्राणो पातनाश्च क्रिया हिताः ॥ २३ ॥

वेगनिग्रहजा रोगा यएते परिकीर्त्तिताः ।

इहंक्षेपाननुत्पत्तिं वेगानेतान्धवारयेत् ॥ २४ ॥

anorexia, vertigo. In such cases oily, warm, and light diet should be observed.

20. From suppression of thirst arise dryness of the throat and mouth, deafness, vertigo, sinking, aching in the heart. In such cases cooling drinks should be used.

21. From suppression of the tears arise catarrh, disease of the eyes, of the heart, anorexia, vertigo. In such cases sleep, wine, and sweet words are the remedies.

22. From suppression of sleep arise yawning, pains in the limbs, lassitude, disease of the head, heaviness of the eyes. In such cases sleep, and kneading the limbs are the remedies.

23. From suppression of the panting from fatigue arise tumors in the abdomen, disease of the heart, fainting. In such cases rest, and whatever tends to destroy the wind, are the remedies.

24. Those who wish to avoid the diseases here described as arising from suppression of the various urgings, should never attempt such suppression.

इमांस्तु धारयेद्देवान् जितैषी प्रेत्य चेह च ।

साहसानामयसानां मनोवाक्कायकर्माणाम् ॥ २५ ॥

लोभयोः क्रमवक्रोधद्वेषमानजुष्टित ।

नैर्लज्येर्षातिरागायोऽभिमिथ्यावाच्च बुद्धिमान् ॥ २६ ॥

परपक्षातिमात्रस्य सूचकस्यानृतस्य च ।

वाक्यस्याकालयुक्तस्य धारयेद्देगसुलितम् ॥ २७ ॥

देहमृत्ति र्यां काचित् वर्त्तते परपीडया ।

स्त्रीभोगशेषहिंसाद्या तस्या वेगान् विधारेयेत् ॥ २८ ॥

25. Whoever is anxious for welfare in this world and the next, should suppress urgings such as these;—urgings of absurd boldness or rashness, and of wrong actions of the mind, speech and body.

26. The intelligent should, for instance, suppress the urgings of greed, grief, fear, anger, malignity, arrogance, slander, shamelessness, envy, covetousness.

27. And of extremely harsh, abusive speech, of traducing speech, of unseasonable speech, and of falsehood.

28. Of the actions of the body which tend to the injury of others, such as adultery, theft, violence, &c., suppress the urgings.

(To be Continued.)

२६ स्त्रीभोगशेषक्रोधमानवेगान् विधारेयेत् । इत्यपि पाठान्तरम् ।

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THE
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MEDICINE

VOL. VIII.] Oct. 1876. [NO. 4.

EDITOR'S NOTES.

THE FORM IN WHICH IRON EXISTS IN THE SPLEEN.

MM. Picard and Malassez, whose researches into the functions of the Spleen, based upon the fact of the organ containing a larger quantity of iron than can be accounted for by the quantity of blood it contains, have determined that the iron exists in it not as a special compound but simply as hæmoglobulin. The method of investigation pursued was as follows :—A stream of solution of common salt, which Kuhne has shown does not dissolve hæmoglobulin, was allowed to pass through the splenic artery until it escaped colorless through the splenic vein. Thus the gland was thoroughly washed of all blood without losing any hæmoglobulin that might be fixed in its tissues. Notwithstanding this complete removal of blood from its vessels, the gland still retained its natural deep-red color. A stream of distilled water was now similarly passed through the splenic artery, and it was found to issue bright-red from the vein. The process was continued as long as the water issued tinged. The coloring matter thus dissolved was tested by its behaviour towards oxygen, carbonic acid, and reducing agents, and it was found to be nothing but hæmoglobulin. The decolorized spleen did not yield any iron to further analysis. Hence the obvious conclusion, arrived at by the authors, is, that iron exists as hæmoglobulin in the splenic tissue.

DAILY AVERAGE OF PATIENTS TREATED IN SOME OF THE
CALCUTTA DISPENSARIES.

We take the following from the published reports of the Mayo Native Hospital* and its dependent Dispensaries.

	1873	1874
Mayo Native Hospital Dispy.		313.8
Park Street Dispensary ...	206.7	247.0
Gurranhatta Dispensary	249.6	
Chitpore Dispensary	190.0	194.0
Chadnie Dispensary	462.9	441.1
Sukea's Street Dispensary		137.0

The out-patients are treated in the morning, as is generally the case in all out-door Dispensaries, and the time devoted scarcely exceeds three hours. The work is done by one officer, with the exception of the Mayo Hospital Dispensary where it is taken up successively (not simultaneously) by two or even three officers just as their duties in the hospital are over. The fact is, in Out-door Dispensaries it is scarcely possible to do otherwise, unless indeed the work can be divided amongst a number. This is theoretically possible in Allopathic Dispensaries, but practically, that is financially, it is impossible. In the case of our own little Dispensary it is easy to imagine how it is both theoretically and practically impossible. And if we make the best of our means and opportunities to meet the growing demand for homœopathic treatment, we must necessarily be self-glorifiers and impostors.

MANSLAUGHTER BY RUPTURE OF THE SPLEEN.

We take the following from the *Lancet* (Oct. 7):—A curious medico-legal point was involved in a recent trial for manslaughter in Ceylon. A coolie, in consequence of alleged impertinence, was

* The Mayo Native Hospital is the old Native Hospital established in 1792 in Chitpore Road, and removed in 1796 to a suitable and commodious house at Chadnie in Dhurumtola Street. Ever since that date it has been popularly known as the Chadnie Hospital. Through the exertions of its then Superintendent Dr. Charles Macnamara, the hospital, under the designation of the Mayo Native Hospital, was located in its present magnificent building on the river bank at Pathuriaghata, where it was opened for the reception of patients by Lord Northbrook on the 5th September 1874. An Institution for the treatment of both In-door and Out-door patients, but on a greatly reduced scale, is being maintained at Chadnie as a dependent institution to the Mayo Hospital.

treated with some violence by the superintendent of a plantation, and died almost immediately from, as the post-mortem examination showed, rupture of the spleen. The man had had fever lately. The spleen was large and soft; it had ruptured, and the peritoneal cavity was full of blood. It was urged for the defence that the spleens of coolies sometimes rupture spontaneously on severe muscular exertion, that the exertion of running away, as the coolie did, might have ruptured his spleen, and that death therefore would not be the direct result of the action of the accused. Dr. Norman Chevers was quoted in support of the theory that the spleen might rupture under such circumstances, but it was discountenanced by the medical witnesses, and we think rightly. An accident so rare, and even doubtful, as such rupture of the spleen must be, cannot be allowed weight in the presence of evidence of direct violence. The Chief Justice ruled that, even if the diseased spleen would have caused the man's death sooner or later, the rupture was so distinctly the result of the violence, that the prisoner could hardly have been acquitted of the charge of at least accelerating the death of deceased, and thus of manslaughter. The jury found the prisoner guilty, and he was sentenced to eighteen months' imprisonment with hard labour.

*WHEN OUGHT CLINICAL INSTRUCTION TO BEGIN?

Nothing in our opinion could be plainer than the answer to this question. Indeed the answer is involved in the meaning of the term clinical instruction. Instruction respecting disease and its treatment at the bed-side of patients is clinical instruction. Disease is disorder or abnormal condition of the living organism; and it must be obvious that for the proper understanding of the abnormal condition, a knowledge of the normal condition is essential. The student must be familiar with healthy structure and function before he can appreciate the changes which they undergo in disease. Nothing, we repeat, can be more plain and in fact axiomatic than this. We are therefore surprised to learn that a strange perversion has taken place in this respect in the medical schools of England. Recently, the first and second year students are required to walk the wards to attend to clinical instruction. We are glad to see our contemporary of the *Medical Times and Gazette* very justly deprecates such a course. As objections he points to the embarrassment and inconvenience to which the advanced students are necessarily subjected by having to mix a crowd of raw students; to the utmost discomfort and annoyance

patients which must result from too many people meddling with and harassing them, and to the danger to which they might be exposed by the students of anatomy bringing with them disease-germs from the dissecting room ; and last, not least, to the serious loss, in the shape of neglect of dissection, which these students must suffer, and which can never be made up hereafter. This neglect of dissection, and consequent neglect of the foundation of medicine, anatomy and physiology, will not only arise from the loss of time in the morning from having to go round the wards, but will arise from another cause which we suspect will operate upon all these raw students. This is the temptation to read up medicine and surgery in order to be able to profit by the prelections of the clinical professor.

PHYSIOLOGICAL AND THERAPEUTICAL ACTION OF CONIUM.

We learn from the *Philadelphia Medical Times* (17 April 1875) that according to Dr. Lautenbach Conium produces its peculiar action not by acting upon the corpora striata, as supposed by Dr. Harley, but by paralyzing the peripheral efferent or motor nerves. It exerts, besides, a depressant action on the motor tract of the cord. Conium is not a direct hypnotic but it induces the brain to repose by producing complete repose of the muscular system. The heart-beats are at first increased and then decreased even by small, medicinal doses ; in large doses the decrease is very great. The respiratory movements are also at first increased and then decreased by conium. Vomiting is sometimes induced when it is hypodermically injected. It has no action on the kidneys or the skin, but it markedly increases the salivary secretion. In poisoning by the drug while its action on non-striated muscles is distinctly pronounced, the striated muscles seem to be perfectly unaffected. Its action on the pupil is peculiar—locally applied it produces contraction, but when absorbed into the system it produces dilatation. Whatever influence it has upon the sexual system is indirectly through the cord.

According to Dr. Charles Baker the medicinal energy of Conium is dependent upon the locality of its growth. Russian Conium is almost inert. According to him, in certain conditions it is an emmenagogue, and also an aphrodisiac. It is very efficacious in removing sub-acute inflammation of a scrofulous or arthritic character. It subdues the pain of cancerous and other irritable ulcers more effectually than any other drug. It is useful in nervous toothache, and in various forms of neuralgia. It is of signal service in

dysmenorrhœa, amenorrhœa, and chlorosis. All this is very true, but unless administered according to its homœopathic indications, Conium, like other drugs, will certainly disappoint.

ON THE ACTION OF CANTHARIDES.

Dr. Alessandro Cantier, experimented on animals and came to these conclusions :

(1.) Cantharides, taken inwardly, changes the composition of the blood ; they separate and contract the blood-corpuscles when they come in direct contact with them, but contract them only when the action appears after absorption has taken place.

(2.) The faculty of contraction of the heart and of the walls of the blood-vessels, thus also the arterial tension, is diminished by it, the rapidity and frequency of the beats of the heart and the temperature of the body are increased, but it disturbs nutrition and thus acts debilitatingly.

(3.) It causes in different organs blood-stasis, and with a sufficiently large dose even inflammation. Hyperæmia of the brain and spinal cord ensues, in the latter even decided softening, especially in the dorsal and lumbar region, followed by paralysis of the lower extremities and loss of reflex activity.

(4.) The membranes of the brain and spinal cord appear greatly hyperæmic, especially at the base of the brain corresponding to the medulla oblongata, causing frequent respiration and increased acceleration of the beats of the heart.

(5.) It causes hyperæmia and inflammation of the urinary and sexual organs, desquamative or parenchymatous nephritis, sometimes with albuminuria. The sexual nîsus is increased, and abortion may take place.

(6.) It causes gastro-enteritis, with extensive hyperæmia, ulcers in the gastric mucous membrane, and effusion of a yellow mucus. An injection of the tincture into the veins only causes congestion of the gastro-intestinal mucous membrane, sometimes with diarrhœa.—*Med. Neuigk.*, Dec. 1875.

FUNCTIONAL RELATION BETWEEN THE SPLEEN AND THE LIVER.

Dra. Drosdoff and Botschetschkaroff, as we learn from Dr. Power's report in the *Mé dico-Chirurgical Review* for July, in experiments on a narcotised dog whose abdomen was laid open in such a way as to

expose both the liver and the spleen, observed the following curious relationship between these organs :—

1. Section of the nerves forming the plexus lienalis causes the spleen to augment in all its diameters to the extent of some centimeters, and irritation of the distal cut extremities causes it to diminish. As soon as the latter process commences the liver begins to enlarge, the tubules becoming more sharply contoured, their color a more pronounced red, the borders of the organ more rounded, and the whole texture firmer.

2. If whilst the spleen is swollen the liver be pricked by a needle, scarcely any blood flows ; but as soon as the spleen has been caused to contract by the passage of the electric current, it flows so freely as to empty the liver.

3. After each contraction of the spleen the number of white corpuscles in the liver increases, as was ascertained by direct enumeration.

4. On irritation of the splenic nerves the pressure in the splenic vein rises.

5. As soon as the irritation is no longer applied the pressure falls to its original level, though before the spleen attains its original volume, indicating that the effect observed is not altogether a vasomotor action but is due to the co-operation of other muscular elements which have indeed been demonstrated in the lesion of the spleen.

6. Ligature of the splenic vessels materially diminishes the manifestation of the above effects.

Dr. Power tells us that Drs. Drosdoff and Betschetschkaroff were led to make these experiments from an observation of Dr. Botkin that the liver augmented in volume in patients in whom the spleen had been made to contract by the passage of induced currents of electricity. Our readers will see how these facts also harmonize with the view we took of the safety-valve action of the spleen, in malarious fevers, in relation to the stomach and the liver, a view which we first published so long back as 1863, and which we repeated in our paper on "*Homœopathy in the Treatment of Malarious Fevers*," which we sent to the British Homœopathic Congress of 1864.

NATURE AND MEDICINE.

Prof. Olulundtung of Copenhagen thus summarizes the processes of cure as effected by Nature and by medicine.

I. The processes followed by Nature are :—

1. Reaction. Reaction removes the morbid stimulus and repairs the disorders it has caused.

2. Vicarious or elective action. Tentatively it directs the vital activity of the organism which has suffered in consequence of cold, of compression, &c., towards organs in which congestion is the least dangerous. Example : mucous membranes.

3. Localization.—The effort to cure an essential (constitutional) disease, to purify the blood, by giving rise to a local disease.—Example : The crises and metastases in fevers, in gout, in cancerous tumors.

4. Sympathy, reflex action, synergy.—The possibility of this *methodus medendi* is not denied, although it is seen very rarely, and is almost always insufficient and dangerous.

When there is weakness, see if it is real or apparent. Never confound the pulse of oppression of the forces with the pulse of extreme weakness. It is also necessary to recognize when the functional activity is increased by reaction, by vicarious or elective action, by localization, by sympathetic action, for on the correct appreciation of these points depends success.

II. The curative means or remedies which Nature makes use of are :—

1. Her simple remedy.—Augmentation of functional activity :

a. Of the primæ viæ and of the urinary system : vomiting, diarrhœa, expulsion of gravel, of calculus, &c.

b. Of the Vascular system.—Exudation of fluids, curative or nutritive, hæmorrhages, excretions, resorption of liquids, of tumours, &c.

2. Her compound remedies :

a. Inflammation.—The stimulation of the capillaries, whether idiopathic, sympathetic, or consecutive, produces congestion,—*febris capillaris*.—This stimulation extends to the neighbouring arteries—*febris arterialis*,—with hyperæmia, resulting in adynamia and stasis. The inflammation elaborates, by means of exudation, the eminently curative agent, *pus*, an agent which is not only

in a state fit to eliminate the morbid stimuli, but which is moreover charged to repair the waste of substance.

b. Fever.—Acceleration of the circulation for some days or weeks, terminates in localization, and produces by a stimulus existing in the blood,—*febris idiopathica*,—or to the periphery,—*febris sympathetica*, called to the rescue by the arterial fever in cases where it is impossible for itself to perform the task.—The fever, nevertheless, never destroys very infectious poisons, as is evidenced by the fact that other organisms are capable of being contaminated by them.

From the days of Hippocrates to the present, a large number of the greatest practitioners have been vaunting the *vis medicatrix nature*. But how many are the physicians who remember this healing force at the bed-side of their patients? For centuries this healing force has been misunderstood, and misrepresented by false theories and by unreasonable prescriptions.

Different causes have brought about this result.

Nature acts upon the blood and upon the nervous system: But these might be attacked by some hereditary, constitutional malady; they might have been vitiated by education, by the mode of life, &c. In these cases nature may be unequal to its work, the reaction may be insufficient, the vicarious action anomalous, the localization vicious, the sympathy dangerous, in short, the remedy turns out to be poison. Such is ordinarily the case in civilized countries; and it is not astonishing that physicians there should be led to question the curative action of nature.

We know that fever and inflammation are causes of great mortality, though they are the very best remedies of nature. This depends, in great part, upon the unfavorable conditions we have mentioned above; in part, upon the treatment which has been employed and in disagreement with the processes of nature. But if there were neither inflammation nor fever, would the mortality be less?

Fever is the only antidote, the only remedy in cases of infectious poisoning. Ask the surgeon, if he can do without suppuration? A person who suffers cruelly from an attack of gout, of external cancer, of other morbid tumors, of a local malady, will feel very little inclined to call these external mischiefs remedies,

and nevertheless such they are. * Our mysterious confrere, Nature, has often need of assistance from art, and the more so as the degree of civilization is more elevated.

In such case, art should always be *nature's interpreter and master*, and have recourse to different curative methods :

1. It should eliminate the cause, if it thinks it can do so better than can be done by nature. This is the *methodus causalis*.

2. It ought to confine itself to keep the patient under observation, if it is convinced that nature can work out the cure more promptly, *luto, cito et jucunde*.—It should formulate hygienic precepts to eliminate every thing calculated to fetter the curative action of nature. This is the *methodus expectans symptomulica*.

3. It ought to assist the vital force when torpid and languishing, such aid being local or general. This is the *methodus excitans, roborans*.

4. It should restrain this same vital force, calm the suffering, allay the spasms, extinguish the heat (by employing cold, water, ice, affusions, baths) in affections where the heat is excessive, or the fever, local or general, consumes the patient. This is the *methodus sedans, temperans*.

5. It ought to divert or displace the vicarious or elective action when the seat of election is badly chosen. This is the *methodus derivans*.

6. It ought to eliminate from the blood or the organs the morbid stimuli, very often the latent causes of diseases. This is the *methodus corrigens, evacuans*.

7. It ought to employ remedies of which experience has demonstrated the efficaciousness. This is the *methodus empirica*.

This pathology, based upon nature, explains better than any other system, how the same affection may be treated by remedies the most different. In many cases, to nature comes the honor, not merely for the cure of the patient, but also for the reparation of the faults committed by art.

A. RETROSPECT OF SIX MONTHS' MEDICAL PRACTICE AT RANCHEE

BY SURGEON G. C. ROY, M. D., F. R. C. S.

During the last six months I have been stationed at Ranchee I have had several important cases under my treatment which are well worth recording. As a rule the climate of this place is temperate and salubrious. Situated more than 3000 ft. above the level of the sea, it has a prolonged winter season and a moderate summer. The summer and the rainy seasons of the last year were very much exaggerated, so that a heavy and almost unprecedented fall of rain succeeded a period of scorching drought. There was at first no marked increase of any special illness except cholera which lasted through the hot and wet seasons with only a short interval of repose. Cases of fever amongst children were rather frequent, but at one time diarrhoea and dysentery formed the prevailing features, so much so that not a family escaped without an attack. This was during the height of the rains when the wells were full and the water everywhere was muddy and altered in taste. In absence of any chemical analysis it is impossible to fix on any special ingredient as being the injurious constituent, but the presumption is strong in favor of such an hypothesis on account of the limitation of diarrhoea in an aggravated form in certain localities where every now and then a neglected case passed off into cholera and ended fatally with symptoms of collapse. But the majority of the diseases bore no characteristic stamp of seasonal change. There were three cases of erysipelas in children, all of which proved fatal with secondary complications. Thus, one child with erysipelas of the head died of croup during convalescence, another with erysipelas of the face died suddenly of cholera, and a third with a massive swelling of the glands under the pectorals and axilla died of metastasis to the lungs. The swellings threatened suppuration, but under alkaline treatment in which Liqr. Potassæ was the chief ingredient, rapid resolution set in, and the parents had scarcely time to congratulate on the result when the lung symptoms supervened.

The other cases were of diverse nature. Thus, one was of post partem hemorrhage where flooding was the result of preci-

pituate labour. The woman was in *articulo mortis*, and it was a mere coincidence that I was on the spot. The bleeding was effectually controlled by introducing the hand into the uterus and exercising counter pressure over it from outside. An injection of tincture ferri muriat lotion was used to wash out the cavity of uterus, and one drachm of tincture of ergot was given internally to excite the passive uterus to contraction, every moment the flickering heart threatened to stop, but under the administration of stimulants by the mouth and rectum its action was sustained, and after the lapse of two hours, the patient began to revive and made a steady progress towards recovery.

Another woman died after miscarriage on the 8th month of gestation. I was called to see her in the last stage in a state of complete coma, when her pale anæmic look, puffy face, edematous limbs at once bespoke the nature of her real complaint. The miscarriage was doubtless the result of her ill health, which was caused either by albuminuria or leucocythæmia allowed to go on unchecked without treatment. In both of these diseases a watery condition of blood is established, and when added to this, there is hemorrhage consequent on miscarriage, there is very great danger of blood coagulating in the heart. The coagula thus formed carried to the brain, block up arterial channels, and induce coma, which was profound in this case to the last.

An elderly man was suffering from some chronic vesical irritation; the urine was turbid, sometimes bloody, and passed frequently with some feeling of uneasiness in the bladder. There was no history of gonorrhœa or stricture, but the urine contained some albumen, was of low specific gravity and contained numerous crystals of uric acid. An exploration with the catheter was necessary to determine the site of the hemorrhage, whether it was in the urethra, bladder, or beyond that point. This little interference set up an amount of irritation which well nigh threatened extinction of life. The urine became bloody throughout, inflammation of the bladder was induced with a low fever, which very much prostrated the patient. It served however to clench the diagnosis into the bladder, and we were able to push on remedies which we would not have ventured before. Turpentine, tr. ergot and tr. ferri muriat with uva ursi soon brought the disease under control, and the patient is to all intents and pur-

poses recovered. Whether the vesical irritation was due to the gouty diathesis of my patient, or was the result of some villious disease of the bladder, I have not been able to determine.

Malarious fevers are as a rule rather unfrequent. Cases of fever are very obstinate, especially those that take on a remittent type. Quinine is admissible in all instances, and I never had occasion to use more than 20 grains before an expected paroxysm. In fact, my experience has led me to believe that heroic doses are quite uncalled for, and are likely to do harm by setting up an irritation of its own. If 20 grs. would not check the fever in any case, I set it down as an axiom that larger doses won't, and the case will do well without the drug. I have found very great use from the vapour bath, and it is a powerful adjunct to our treatment if judiciously managed.

A man was struck with lightning when he was under the shelter of a tree during a thunder-storm. He was brought with almost complete loss of power of his upper and lower extremities, and emphysema of the neck. The latter symptom was a peculiar one, inasmuch as even in the post-mortem examination no fracture of the rib was detected. There was a distinct rent on the posterior margin of the left lung close to its root. How could this portion have given way? The probability is, that he must have been first stunned by the report, and fallen prostrate on the ground, and the electric fluid must have passed through his chest producing such an amount of compression as to cause rupture of the lung. The air passed through that rupture into the mediastinal space, and thence diffused itself through cellular communication into the neck and upper part of the chest. Respiration was very much embarrassed, and as the loud gurgling in the chest pointed to oedema of the lungs and congestion, I abstracted 1 1/2 oz. of blood from the arm with marked temporary relief. The patient died ultimately of asthenia of the heart.

During the outbreak of cholera all sorts of remedies were tried without avail, till driven to desperation I determined to give intravenous injection of salines a trial. This might seem a revival of the old and once rejected plan, but I tried it with some modification, viz., I injected a small quantity only, and whilst the reaction was induced I took hold of the opportunity to give at

once a good dose of chlorodyne, and two hypodermic injections of nitrite of amyl, miii in each. From a hopeless state of collapse the patient at once revived, and felt so far well as to sit up at night and smoke his *hookah*. The pulse continued for nearly 10 hours when it began to flag. No other untoward symptom resulted to the very end. He simply died away for want of sufficient fluid in the system. I injected only 5 ounces, and if I had repeated the injection at an interval of 3 or 4 hours, I think I could have saved his life. The result was different from what the old practitioners used to meet with in their practice after the injection of salines. They feared relapse of the former symptoms and collapse after the lapse of an hour or two, but in my case, no such symptom returned.

A case of *scintica* was treated with subcutaneous injection of water. It was a very obstinate case, and had been going on so long that the pelvis was rotated on itself and the limb contracted. Pains in the night prevented rest, and made his life a burden. The needle of the syringe was carried deep into the tissue over the course of the sciatic nerve in three places, and a syringe-ful of water was injected each time. It produced immediate jerking of the muscles. After similar injections repeated every third day and continued over a fortnight, the patient felt much relieved. The pain was easier, he had better rest, and could walk more upright, though, on account of the deformity of the pelvis that was left, he could not walk in an erect posture.

• THE NEW DISEASE—KATKATIA OR SURAKU-
MARI—A HOAX AND A PANIC.

If we devote a little space to what we believe to be a delusion, that is passing away, it is only to show the extent to which delusions might captivate the mind in the matter of disease. The supposed disease is said to have had its origin in Madras. Our contemporary of the *Indian Mirror*, in his anxiety to warn the people of Calcutta and thus enable them to prepare against the disease, was the first to sound the note of alarm. The epidemic wave is said to have passed through Orissa, and soon it was found to have arrived at Diamond Harbour and Uluberia. Thence to Calcutta, through the intervening villages on either side of the Hughli, the march was rapid. Bhowanipur is the place where the fell disease is reported to have made the greatest ravages. In Calcutta itself the reported cases have not been many, but even among this small number some deaths are said to have marked the severity of the disease. The good people of Calcutta, counting some of the most intelligent among them, were sorely alarmed, and we had the sad spectacle of several, who could not be accused of credulity or ignorance, with strings tied round their toes. For the tight ligature and the cautery above the seat of attack of the disease, were believed and actually had recourse to as the sovereign and in fact the only remedy, and the ingenuity of our city very happily discovered by simple inference that the tying of a string was the best prophylactic. We say happily, because it has served as a prophylactic of the real disease, which strangely enough is nothing but an imaginary fear. There is no man who is free from abnormal sensations in his body, here and there, such as itching, tingling, burning, aching, stitching, &c. And in ordinary times, very properly no notice is taken of these freaks or irritations of the nerves. But ever since the panic has taken possession of the people's mind, these sensations, when occurring in the toes, or fingers, or head, have begun to be magnified and interpreted as precursors of the dreaded disease, and immediately the reputed remedies, the ligature and the actual cautery, are applied, and thus a veritable disease is created, entailing terrible sufferings upon the unfortunate victim. Under these circumstances any thing, that is calculated to allay fear and prevent these cruelties, is welcome.

A curious fact, in connection with this epidemic of delusion and panic, is, that the cases have been all reported by laymen, and that not a single case has come under the observation of the trained eye of a medical man, previous to the tying of the ligature and the application of the actual cautery. Even in the case of laymen-reporters, eye-witnesses are very rare indeed, cases were described as if the persons so describing them had actually seen them, but when pressed to be more precise, it was always from some very reliable person that they had heard it. In our anxiety to be able to see a case with our own eyes, we were prepared to call, free of charge, wherever and whenever we might be required and the more we made known this our intention, the less we heard of the cases.

We append the following testimonies of two eminent physicians of the City in corroboration of our own convictions :

Dr. French, Civil Surgeon of the 24-Parganas, thus reports to the Medical Department on the supposed Disease from personal observation :—

With reference to your memorandum No. 350 of 5th instant, forwarding report from the Sub-Inspector of thanna Atcheepore, to the effect that a "strange sort of disease" has lately appeared in the villages about that place; and that "within four days some 100 men were attacked," with one death, I have the honor to inform you that yesterday I drove down to Atcheepore and went through the villages of Gopigunge, Charial, Nundhunpore, and adjoining *parrahs*. In no place could I find a single case of the disease, and all the villagers told me that "it has come and gone."

I was pointed out in each village some men, women and children, who were said to have suffered from the affection, and on their arms or legs I saw marks of ligatures, and the application of the actual cautery. The villagers gave me the following account of the disease, which they affirm "is a new one, and that it prevailed in the villages on the right bank of the river before it appeared in those on the left bank." "There are no premonitory symptoms: the persons affected were all in good health up to the moment of seizure."

"The onset is sudden, and may come on at any time of the day or night."

"The upper limbs, lower limbs, or head may be attacked, but the disease is limited to only one member and the commencement in the head is rare."

"The person first experiences a sensation of pins and needles" (*jin-jin*) in his fingers if the arm is attacked or in the toes if the lower limb is the seat of the disease. In a very short time this is followed by numbness, which lasts for only a few minutes, and the burning-pain (*kho-kho*) then

sets in. They are of opinion that "if this pain be not checked, it will travel up the limb into the trunk. There are no other symptoms observable at the time. There is no fever, no restlessness, no headache, no pains in back or loins, nor, in fact any symptom of constitutional affection." In order to prevent the disease travelling up, the natives lightly encircle the limb with two ligatures placed within a few inches of one another. They then treat the affection by the application of the hot iron. After four or five hours the ligature is removed, and the person attacked is again quite well. His "appetite is as good as ever, and his sleep is undisturbed."

I was told of three or four deaths, and the natives maintained strongly that in "each case the pain first attacked the head; that they had fever, became insensible, and died within 24 hours."

These deaths may have been caused by fever complicated with head symptoms, and it is probable that any rapidly fatal attack of illness of a similar nature would be at the present time set down by the natives to the new or *khon-khon* disease.

I saw nothing that could not be explained on the supposition of a panic and imaginary nervous affection. The subsequent bad symptoms of pain and swelling are due to the treatment adopted—viz., a tight ligature and the application of the actual cautery. I saw a young man of about 17 years of age suffering from an enormously swollen right arm, which was gangrenous in parts. He stated that seven days previously he was attacked in the right hand, and kept on a tight ligature below the shoulder joints for nearly two whole days. The state of his arm was entirely owing to this treatment.

I have heard that a few cases occurred in Alipore, but I have been unable to see a person actually suffering. I have, however, some men on the look-out for cases for me, and should many more occur, I hope to be able to send you a further report.

The natives say that it is not contagious, and certainly only a few in each village have suffered from it.

Dr. Payne, Health Officer of Calcutta, concludes his third Report for the current year with the following observations on the same subject:—

In conclusion, I would offer a few remarks on a subject which has, within the last few days, produced some excitement in the town. A rumour has been current to the effect that a peculiar disease, new to this neighbourhood, but resembling a serious affection known in Southern India, has been advancing towards Calcutta from the south and south-west. It is described as commencing with a tingling sensation in one or other extremity, which, unless stopped by remedies, creeps up the limb, and it is supposed that if it reached the head or trunk it would be fatal. The remedy consists in tying ligatures

Kotkotea Soorrukmarī

at intervals round the affected member and applying the actual cantery. If this be done in time it is alleged that nothing further happens.

The letters which have appeared in the newspapers on this subject have given evidence of nothing but excited and credulous fears. Nevertheless, if these influences are sufficient to induce men to submit to the treatment described, they may be in their consequences serious enough; for however imaginary the disease may be in itself, it is readily converted into a severe reality by fire and cord.

There was, therefore, abundant reason for enquiry, which should be prompt, for panic spreads more rapidly than disease. Accordingly, on the first intimation of alarm, I made enquiries and found many persons who had heard of the disease, but none who had seen it; and having learnt from Dr. French, Civil Surgeon of the 24-Pergunnahs, that he had travelled in quest of information as far as Atcheepore and visited all the villages on the road which it was said to have attacked, I obtained his permission to make a copy of his report on the subject, which I annex hereto (Appendix 3).

Dr. French gives sufficient reason for believing that an excited imagination has been the cause of all that has been said and felt. It is worthy of note that even where the people supposed they had been attacked, no serious results had followed the ordinary symptoms, which were merely nervous sensations commencing in the fingers and toes. Some fatal cases of illness, which were probably severe fevers, were attributed to a rare form of the same disease first attacking the head.

Nothing is more natural than that an ignorant populace, whose minds are filled with a dominant idea, should ascribe a fatal attack of any ordinary illness to the new and mysterious cause and it is probable that, if the belief gains ground, we shall hear of an infinite variety of seizures arising in the same manner and of a new name for half the diseases with which we are familiar.

So far as perfect information goes then, the alarm appears to be unfounded, but the barbarous treatment may produce very serious results to the limbs of the people if the panic should continue. Fortunately it seems to have passed away from the villages between Calcutta and Atcheepore after the occurrence of a few cases and the same rapid passage may be hoped for through the town itself, for it has been discovered that the disease may be prevented by wearing a thread round the great toe, and the practice has been largely adopted.

Enquiry will be maintained that early information may be had if any more real or serious matter should appear to be connected with the rumours.

A STUDY OF ANACARDIUM ORIENTALE IN REFERENCE TO ITS ACTION ON THE SKIN.

Anacardium does not seem to have been thought of by any homoeopathic physician in disease of the skin. Indeed, we have not seen a single case recorded in which the drug has been tried in such diseases; and when such a learned authority, as the author of *Pharmacodynamics*, says that he is "not aware that it has been used as yet as a cutaneous remedy," it is almost certain that in Europe and America it has not yet had a clinical trial in disorders of the external envelope of the body. Noack and Trinks merely say that it may be used in herpes furfurans and warts. This neglect of the drug appears to us all the more wonderful, inasmuch as the cutaneous pathogenesis, recorded by Hahnemann in his *Chronic Diseases*, is very copious, as will be seen from the list of the symptoms given below:—

1. Violent itching of the hairy scalp.
2. Itching of the forehead.
2. Many tubercles (little boils) upon the hairy scalp, of the size of a little pea; they feel sore when touched or scratched.
4. Painless pimples, with red areolæ, at the top of the left temple (after nine hours).
5. Painless pimples, with red areolæ, at the corner of the right wing of the nose.
6. Red pustules on the septum, in the right nostril, with soreness when being touched.
7. White scaly herpes on the right cheek, close by the upper lip (after 4 hours).
8. Hard, red pustules on the forehead and in the corner of the left wing of the nose, with a feeling of soreness, for several weeks.
9. Rough exfoliating, herpes-like skin, around the mouth with titillation.
10. Dryness of the lips and their commissures.
11. Burning dryness of the extrnal borders of the lips, as from pepper.
12. Itching and titillation in both axillæ, which forces one to rub (after quarter of an hour).
13. Pimples with red areolæ and pus at the tip, on the inferior portion of the upper arm, with painful itching during motion of the arm, inviting to scratch (after 12 hours).
14. On the side of the left index finger a pimple, which opens on the day following and then passes off, is formed after nightly itching in the hollow of the hand and between the fingers; violent friction relieves this disagreeable feeling, without diminishing the violence of the symptom.
15. The hands, even the palms of the hands, are covered with warts.
16. Pustules upon the index fingers, with red areolæ, and stinging sort of voluptuous itching, which spreads into the whole of the palm; the itching forces one to press and to squeeze, which gives origin to a red and white lymph; afterwards a scurf appears, beneath which is formed a plug of pus; in the evening the ulcer, which lasts eight days, is affected with a drawing, sore pain.
17. Itching eruption around the knees, as far as the calves.
18. The skin of the body is insensible to itching stimuli.

19. General voluptuous itching over the whole body, which spreads still more by scratching.

20. Desire to scratch, without itching, of an erratic nature; after scratching immediately disappears.

21. Corrosively stinging, itching upon the whole body, of an erratic nature, especially upon the back and thighs, with desire to scratch; scratching relieves the symptom for a short while.

22. In the evening, when in bed, heat in the skin of the whole body, with burning itching and irritation of the skin such as arises from much scratching; after the scratching, the burning increases.

23. Burning itching at the sore places, increased by scratching.

24. Burning and stinging of the tetter, which had itched before.

To these symptoms, Dr. Allen has, in his *Encyclopædia of Pure Materia Medica*, added the following, from Reil, Trinks and Fox, all derived from the direct application of the juice to the skin :—

1. Destruction of the epidermis, leaving an inflamed surface covered with small, miliary pustules, with unbearable itching, and discharging a yellow liquid, forming crusts.

2. During the healing of the skin excessive desquamation.

3. Appearance of hypertrophy of the skin, with swollen and indurated papillæ and wheals, and formation of thick folds, which impede the motion of the joints.

4. Bright scarlet eruptions of the whole body, especially of the thigh in contact with the nut, and of the abdomen.

5. Several blisters opened, and discharged a yellowish, transparent liquid, which hardened to a crust in the open air.

6. Chest, neck, axillæ, upper arms, abdomen, scrotum, thighs, were not only covered with raised crusts, discharging a thick, yellowish liquid, but these had partly changed into wart-like excrescences, with thickened epidermis, the whole intermediate skin being of an erythematous redness, and the itching fearful (from wearing the nut).

7. The hands looked like those of a mulatto, white with black spots.

8. The burning changes to an extremely painful itching, combined with stitching, like the stings of insects (4th day).

9. The cutaneous irritation was accompanied with feverishness, loss of appetite, and constipation.

Dr. O'Shaughnessy, in his *Bengal Dispensatory*, under the article Anacardium, relates the following bit of interesting pathogenesis from topical application in his own person :—

"A minute drop of the juice placed on the back of the hand, occasioned in the Editor of this work the eruption of an herpetic blotch, intensely itchy, and scaling from the centre towards the circumference, which did not disappear for eight months, and left a scar like that of a burn."

The following cases, that recently came under our observation, further illustrate the action of anacardium on the skin :

On the 9th August last, a girl, named Charunetra, aged 10, came to me with erysipelas of the face and arms. These parts were red and considerably swollen, and vesicles of various sizes were

on them. The history was that her brother was boiling some *bhela* (the Bengali name for the nuts of *anacardium*) with other ingredients in order to make writing-ink. She was looking over the pot, and was thus exposed to the vapours that were being emitted from it; she also says that some particles of the boiling liquid were spirted over to her face and arms. Almost immediately these parts began to swell with great pain. In the course of a few hours minute pimples were observed, which increased in size and became filled with fluid, which was found, on rupture of the vesicles, to be acrid and sticky, giving rise to similar eruptions if it came in contact with healthy skin. There was much itching in the affected parts.

I gave her no medicine, and kept her under observation. The erysipelas gradually subsided. Some of the vesicles dried up, others passed into the stage of pustules, which also ultimately dried up. The whole disease disappeared in the course of a fortnight, with desquamation of the skin.

On the 7th September last another case presented itself of a similar nature to the above, but with one remarkable peculiarity. This was in the person of a boy aged 12. Twelve days before, that is on the 27th August, while pounding some nuts of *anacardium*, he noticed the black juice of one of them spirting out and coming in contact with the skin of his legs, hands and forearms. Immediately the skin became blackened in those places where the juice had come in contact, and where, in a very short time (a few minutes), small blisters formed, exactly resembling the blisters of burn. On the morning of the third day these blisters were found ruptured and converted into ulcers, probably from scratching during sleep. On the morning of the 10th day (Sept. 5) the right side of the face was found red and slightly swollen, and was more so by evening; next morning the left side of the face was also red and swollen; in fact, the whole face was now bloated and red. On inquiry I ascertained that the discharge from the sores in the extremities had not come in contact with the face. This was therefore the constitutional effect of the poison, resulting from its absorption through the skin of the forearms and legs. It is also noticeable that there was intense itching but no burning in this case throughout. There was no febrile disturbance. There was constipation for seven days in the beginning.

In this second case I gave *Rhus tox.* 6 with remarkable benefit. Indeed the best analogue of *anacardium*, is so far, at least, as its action on the cutaneous system is concerned, is *Rhus toxicodendron*, and they must mutually be antidotic, unless other symptoms contra-indicate.

(To be Continued.)

Gleanings from Contemporary Literature.

SULPHUR.

By D. DYCE BROWN, M.A., M.D.

The following is the concluding lecture of a course on *Materia Medica* delivered in Aberdeen during the Summer Session of 1876 :—

Gentlemen,—*Sulphur* is a medicine which, in the Allopathic Pharmacopœia, occupies a very minor position indeed, but in homœopathic practice it is one of those remedies we could least do without, and one which is used by us to a very great extent. In old-school practice, its virtues, to judge of its use in disease, are nearly limited to forming part of a laxative electuary, made up with other laxatives, and to its external use as a remedy for the itch. But you require to come to the homœopath to learn the inestimable virtue and value of this medicine. We shall see as we proceed that some of its homœopathic uses have been known to old-school physicians, but employed in practice only by a few.

That *Sulphur* has an elective affinity for the skin has long been known, and it is said in old-school books to “determine to the skin.” This has amply been confirmed by homœopathic provings, and by observation of the effects of sulphur baths, and of sulphurous waters as those of Harrogate and of Eaux-Bonnes in the Pyrenees. We find that it causes a feeling as of heat and burning, with itching, which is relieved by scratching, and made worse with the heat of the bed. It also produces various eruptions, sometimes in the form of papules, and in other times of vesicles, which the papules may develop into. The vesicles may go on to form pustules, and in some cases boils.

Like all drugs which have a marked action on the skin, it shows also a marked affinity for mucous membranes. We find in the provings, confirmed by the observations of the effects of sulphurous waters, that the whole tract of mucous membrane from the eye downwards to the anus is affected, with its branch or off-set—the respiratory mucous membrane.

In these affections we do not find acute irritation or inflammation, such as we saw produced by *arsenic*. There is rather an element of chronicity, if I may term it, in its action, or of *venosity*, as some writers term it. By this is meant not that acute arterial congestion which we saw in *arsenic* and *belladonna*, but a slower, more chronic congestion, which is more venous than arterial. All homœopaths remark this. We shall see this element running through the whole action of *sulphur*, and indicating its therapeutic use correspondingly.

In the eyes we find injection, of a non-acute character, of the conjunctiva, with redness and congestion of the lids, and tendency to Meibomian discharge. In the nose, there is also a catarrhal condition of a chronic form set up, with a good deal of discharge. In the chest we find cough;

sometimes dry and tickling, sometimes with a good deal of expectoration, accompanied with heaviness, oppression, and tightness of the chest; evident tendency to bronchial and pneumonic congestion, and sometimes even bronchial or pulmonary hæmorrhage.

In the stomach there is a chronic form of catarrh produced, and in the bowels constipation. You are all aware that it is said to be a laxative, and so it is in full doses, acting chiefly on the rectum, but in smaller doses all the provers had constipation developed. Along with this there was burning and itching in the rectum, and tendency to hæmorrhoids. There was, moreover, some urinary irritation, and sleeplessness, the latter arising from the general state of constitutional irritation produced by the drug. Another important symptom produced in many of the provers was pain, of a rheumatoid character, affecting the joints, the muscles, and often feeling as if in the bones. One prover, a medical student, was at first sceptical as to these pains, which he felt in a marked degree, being caused by the *sulphur*, and continued taking the medicine. The pains, however, continued and increased so long as he took it, and began to cease whenever he left it off. Though at first sceptical as to the *sulphur* being the cause of these pains, he ended his proving fully convinced that such was the

Such is a general sketch of the action of *sulphur* on the healthy body, but before going to its therapeutics I must take notice of one great reason for its extensive employment by all homœopaths since the time of Hahnemann. Some of you may have heard of the famous *psora theory* of Hahnemann—a theory which has been the butt for the jeers of allopaths up to the present day, and which they triumphantly point out as an evidence of Hahnemann's absurdities. What does the *psora theory* mean? Hahnemann found that in a number of chronic diseases which came under his treatment, the homœopathically indicated remedies relieved, or ameliorated to a certain extent, but failed to eradicate them completely. When they seemed to be cured the disease broke out afresh; and frequently he found that patients remained in a chronic state of undefined ill-health, and seemed unable to throw off their maladies in the way that others did. In seeking for an explanation of this phenomenon, which often marred the success which he expected, the idea struck him that such cases were the subjects of what he called a "chronic miasm." By this he meant some constitutional, or, as we should say, some diathetic peculiarity which was deeply rooted in the constitution, and modified all the complaints of that person to such an extent as to prevent the thorough and satisfactory cure of their ailments by the ordinary homœopathically indicated remedies.

He conceived that there were three chief *miæsmæ*, which he said were the *itch*, *syphilis*, and *syccosis*. The first manifested itself locally by the occurrence of skin symptoms, or the tendency to them, resembling the itch; the second by the usual syphilitic appearances; and the third by condylomata or mucous tubercles at the anus. At present, as bearing on our subject, we need only take up the first chronic *miæsmæ*—the Itch or

Psora. Now, in our day, and with our knowledge of the differentiation of the itch proper from other cutaneous disorders more or less resembling it, and with our knowledge that the itch or *scabies* depends on the presence of a parasite, the *acarus scabiei*, this theory, that the itch is at the bottom of numerous irregular or abnormal forms of disease seems the height of absurdity, and it is from this point of view that our opponents enjoy such hearty laughter at the expense of Hahnemann and homœopaths. But we must keep in view that pathology and the diagnosis especially of skin diseases were far behind in the days when Hahnemann promulgated his theory, compared to what they are now. Keeping this in view, the more closely you look into this *psora* theory the more evident is the great truth at the bottom of it, and the more clearly is the genius of Hahnemann shown, in his admirably thought-out and argued theory.

Whoever reads what he says on this subject will see at once that he confounds the disease which we know as *scabies*, or the itch, with other skin eruptions, resembling it more or less in external manifestations. Every one who has practised for any length of time has seen cases which at first sight are extremely like *scabies*, and can only be differentiated by a careful examination of the parts, aided by the history of the case, the length of its duration, the probability of exposure to the specific contagion of *scabies*, the state of the general health, and sometimes only by the failure of the treatment, which is always successful in true *scabies*—the external application of sulphur ointment for a few days.

Here was Hahnemann's mistake—a mistake incident to the state of advancement of pathology and diagnosis in his day. Under the general term of the itch he included all chronic papular, vesicular, and even some pustular skin diseases; for we know that true *scabies* has three stages—the papular, vesicular, and pustular stages. All or most of these and other chronic skin eruptions are associated with the same itching of the skin. Were it only for one remark he makes, namely, that what he called the itch sometimes disappeared and reappeared, sometimes was hardly visible, and again only showed a papular elevation as below the skin, it would be clear that he included a number of skin eruptions under the general name Itch.

He noticed that many of the chronic cases of disease which he had failed to cure by the ordinary homœopathically indicated remedies had a history at some former time, or, even along with the disease under treatment, of some trivial, it might be, eruption on the skin. Occasionally he found that the chronic disease began from the period of the in-going of some skin-rash—it might be even in childhood.

Cases were often noticed, and even then recorded, where itch or skin diseases were rapidly cured, or rather driven in, by external applications, and were followed by the development of epilepsy, amaurosis, or general dishealth. Finally, he noticed, and others did also, that these patients got better when the skin eruptions came out again. A case has been recorded in Vienna by one of the most noted oculists of the day, in which

amaurosis came on after the rapid cure, or rather driving in, of a skin eruption; and in which, when the rash came out again, the man regained his sight.

Such were the group of phenomena which led this great and original mind to enunciate the theory that a large class of chronic diseases depended upon a constitutional taint—a constitutional tendency to skin disease—the disease being either latent, or having been reperculated or driven in by external treatment, and therefore not cured.

This he called the *psora theory*. Is there anything absurd in this? Quite the reverse. And in our more modern day, when pathology, general science, and diagnosis are much more advanced, we find the best men advocating the same or a similar theory. We all know the influence of a strumous taint; how diseases, existing in a strumous constitution are not amenable to the same treatment as the complaint existing in a healthy person, but require some other modifying agency. We find the most recent writers on skin disease stating their belief in the existence of a *herpetic* or *dartreux* diathesis, as it is called in English and French—a diathesis which is none other than the *psora* of Hahnemann, under a different name.

We frequently meet with patients who have an alternation of some slight itching skin eruption and general dishealth; the dishealth coming on as the rash goes in, and continuing until it again makes its appearance. Every one knows now how latent gout will modify certain diseases, rendering bronchitis, asthma, and eczema very intractable, until treated for the gouty tendency. And not long ago Sir James Simpson called the attention of the profession to the cause of a very chronic and intractable form of gastric and intestinal irritation, which he believed was produced by an eruption on the gastro-intestinal mucous membrane, and could only be cured by causing, by means of internal treatment, the appearance of the eruption on the skin, on the development of which the gastric disease got well, and for which he gave *tar*.

All these facts show what an important truth lies at the bottom, and is the essence of what Hahnemann named the *psora theory*. And because his means of diagnosis and pathology were limited in his day, and induced him to believe that all these multifarious skin diseases which he refers to were diversified forms of scabies or the itch, is that any reason why our shallow opponents should jeer at the whole thing? Rather let us, with our improved knowledge, join in enunciating more correctly than Hahnemann was able to do the great truth at the bottom of the *psora theory*, and delight to face the sneers of shallow allopaths, by honouring the genius of this great physician.

With such views as to the cause of many chronic maladies, Hahnemann set to work to discover what medicines would meet this psoric diathesis, and these he classed as *anti-psorica*.

In this day even, the use of *sulphur* internally, as well as externally, was known and made use of in the treatment of various skin diseases, and

as his provings brought to light the specific action of *sulphur* in producing skin eruptions of a papular and vesicular character, combined with heat and itching of the skin, he placed *sulphur* at the head of his anti-psoric remedies. And with this new weapon—at least this weapon administered on his theory of modifying the *dartreux* or psoric tendency of certain patients, he found he had success where before he failed. The same success has been obtained by every homœopath since his time, and, as we shall go on to see, *sulphur* administered thus, or, as in old-school terms, as an alterative, has a remarkable curative action.

In most chronic diseases with which we meet, we derive great advantage from commencing the treatment by *sulphur*, or giving it intercurrently with other remedies. It has also been often found that if a medicine which seems clearly to be homœopathically indicated fails, if you stop it and give a short course of *sulphur*, this medicine seems so to alter the system that it then is susceptible to the action of the first remedy; and again we often find that if a remedy goes so far, and then seems to lose its effect, a few doses of *sulphur* seems to rouse the dormant energies of the system, which again responds to the action of the former drug.

One of our most recent converts tells us that he was at one time the bitterest opponent of homœopathy that ever existed, that he took an active part in expelling from a society one of its members who had turned homœopath; that he actively supported the passing of a law in this society forbidding the admission of any homœopath, but that his own experience had been the means of completely changing his views and opening his eyes. He had got into a chronic state of ill-health. He tried allopathic treatment for two years at the hands of the best men in the old school. He had gone to watering places, tried change of air and scene, and finally left his practice for a lengthened foreign travel in hopes of restoration to health. This failed, and he had resolved to give up practice altogether, when he was introduced to a homœopathic doctor, and as a last resource agreed to try his treatment. He was prescribed a high dilution of *sulphur*, and by means of this medicine alone he was completely cured. He began practice in vigorous health, and is now an enthusiastic homœopath.

This is an illustration of what is often found in practice, that cases may present for treatment ill-defined and obscure symptoms—perhaps a combination of states which seemingly have no connection. In these cases the administration of *sulphur* has often a marked influence in improving or altering the general dyscrasia.

In scrofula it is a most valuable medicine, given intercurrently with others; and, not to speak of rheumatism, which requires a special notice, *sulphur* has a marked modifying influence in gouty and rheumatic-gouty affections. It does not seem desirable to continue *sulphur* too long, as after producing its effect it sometimes ceases to be of further service.

In rheumatism it is of essential service. You will remember the decidedly rheumatoid pains which I mentioned as being set up in the provers by *sulphur*—its homœopathicity to rheumatism is therefore clear. Here we

find the same *chronic* tendency of the *sulphur*-indicating complaints. It is not in acute, but in chronic, rheumatism that its effects are best shown ; and in treating a case of chronic rheumatism it is generally a good thing to commence with a course more or less prolonged, according to the result, of *sulphur*. Also, after an attack of acute rheumatism is over, and a certain amount of stiffness remains, *sulphur* comes in to be of service. This use of *sulphur*, viz., in rheumatism, has long been known, though not utilized by the old-school to any extent, chiefly, I believe, because it savoured of homœopathy. "Give a dog a bad name and hang him"—say that a medicine is homœopathic, or is chiefly used by homœopaths, and you will get hardly any one to use it. But long ago a famous prescription in chronic rheumatism was called the "Chelsea Pensioner," and in it the principal ingredient was *sulphur*. And in the highlands of Scotland we have the same thing as the "pensioner" in the simple "brimstone and whisky." Dr. Fuller also, in his book on Rheumatism, speaks very highly of *sulphur* in chronic rheumatism. Here we have another example of the value of a homœopathic medicine testified too extensively by others than those of our school. When in the course of acute rheumatism the heart is affected, we sometimes find that a well-marked bruit disappears within a short time, and in this, I think, we are materially assisted by *sulphur*.

From the marked action which we have already seen that *sulphur* has upon the skin in producing various eruptions, with itching, it is, as we might expect, one of our most valuable remedies in skin diseases. In general itchiness of the skin, or pruritus, without evident cause, and without any eruption except what is produced by scratching, *sulphur* almost always removes this state. In prurigo we also find it of much service, and in most papular eruptions. Especially it is of service in those multifarious eruptions of an indefinite character which appear in unhealthy children, or during the period of dentition. In eczema, and in fact in most chronic skin diseases, we find *sulphur* given intercurrently of service in hastening the cure. Acne of the face, a most obstinate and troublesome affection, is often cured by *sulphur* alone. So also is it of service in those anomalous face eruptions which sometimes appear on the countenances of young ladies in connection with menstrual disorders. In fact there is hardly an affection of the skin which is not benefited by a course or occasional doses of *sulphur*. Boils are well known to be very apt to occur, and to continue in successive crops, to prevent which *sulphur* is perhaps the best medicine. So also with recurrent styes, though it will not check the formation of an individual sty.

Leaving the skin, and coming to the mucous membranes, I shall first speak of the *Eyes*. Its chief use is in chronic catarrhal inflammation of the conjunctiva, and especially when occurring in an unhealthy constitution. In no form of eye disease is the action of *sulphur* more beautifully seen than in strumous ophthalmia. I have over and over again had a child brought to me with such photophobia that it walked into the room with its eyes quite closed, and its hands up before them, while it was use-

less to attempt to see into the eyes. This in such cases is the less necessary, as the objective appearances in strumous ophthalmia are so trifling in proportion to the great photophobia. I have given such a child nothing but a pilule of *sulphur* 3, three times a day, and had it brought back in a week's time looking up with its eyes wide open.

In my experience no drug produces such marked and rapid improvement in this disease as *sulphur*. Sometimes we require nothing else to complete the cure, at other times we find the *sulphur* go so far, and require to be assisted by *calcareo* or *arsenic*. Some practitioners use it even in acute conjunctivitis, but the place of *sulphur* is chiefly in chronic affections, and it is in these that we see its action so clearly. In chronic nasal catarrh, or where there is a tendency to frequent recurrence of this on the least exposure, a course of *sulphur* is of benefit.

Proceeding further down the course of mucous membrane, we find the action of *sulphur* manifested in the stomach in causing a chronic form of catarrh. And in practice, as I mentioned in speaking of *nux vom.*, we get great benefit from giving in chronic cases of dyspepsia, especially with constipation, a dose of *sulphur* at bed-time, some other medicine being given through the day.

Coming now to the intestines, we have seen that the rectum is the part which chiefly suffers; constipation, with itching and burning in the anus, and tendency to piles, was produced. This is the result of moderate doses of *sulphur*, as massive doses act as a purgative.

In the last century, Sundelin, writing of the use of *sulphur* in piles, states his belief that this drug has a specific action on the rectum. And this is evidently believed by allopaths, who in prescribing for constipation with piles invariably give an electuary containing *sulphur*. If it had not a specific effect on the rectum, why should not any purgative pill have as good an effect?—but it is not so. These purgative doses of *sulphur* given by allopaths sometimes aggravate the piles. I know of one case in particular in which this resulted. Our provings very clearly bring out this specific action of *sulphur* on the rectum.

In the chronic constipation you may often give *sulphur* alone for a week or so with great advantage, or, as I advised you in a former lecture, to give it at bed-time, with—say, *nux vom.* through the day. Besides being of great value by itself as a remedy in constipation, it seems remarkably to assist and to be assisted by *nux vom.* Both together, or rather I should say the one by day and the other at night, act much more successfully than either separately. No doubt its constitutional or anti-psoric value has something to do with this. But it is especially when constipation is associated with piles, or when piles are associated with or caused by constipation, that the *sulphur* treatment comes out well. When, as we saw, when speaking of *nux vom.*, portal congestion was produced by or associated with constipation and piles, we find the *sulphur* play a marked part. And in chronic liver disorders, with more or less of a chronically congested state of the organ, a course of *sulphur* is of the greatest service.

Another use of *sulphur* I frequently employ. In sub-acute or chronic affections, when some other medicine than sulphur is indicated, and yet the patient troubled with costiveness, and has been in the habit of relieving the bowels by purgative pills, I can generally quite enable him to dispense with these abominations by giving a pilule of sulphur at bed-time. For example, in a case I lately had of chronic cystitis, which was cured by *cantharides*, the patient said that his bowels were so obstinate that for some months he had to use a purgative pill every night or two. In this case, with the administration of a pilule of *sulphur* at bed-time, the man was able to give up his old purgative pill, as the bowels moved easily every day, and when his cystitis was cured, his bowels were acting naturally every day, and this although he had not been taking the pilule for a little time. Here therefore, with the *sulphur*, was a cure, not a mere temporary relief, as a purgative gives.

Next let us look at the action of *sulphur* on the *respiratory organs*. We have seen that in the provings, a cough, sometimes dry, sometimes loose, was developed, with oppression and tightness on the chest. We see this same action developed in the use of sulphur baths, and from the internal use of sulphurous waters as those of Eaux-Bonnes in the Pyrenees. Of the action of these waters it is interesting to hear what Trousseau and Pidoux say.

To begin with, "the elective action of this mineral water" (Eaux-Bonnes), they state, "on the respiratory apparatus is incontestable."

The following observations I give you from the invaluable work on *Materia Medica* by these accomplished physicians:—

"It is rare," they say, "that after three or four weeks' use at the most of the waters of Eaux-Bonnes, patients do not experience a sensation of sharp heat in the larynx and isthmus faucium, a dry, stiffing, or choking peculiar cough, with a constrictive irritation at the entrance of the respiratory passages, some dyspnoea, mingled with a feeling of weight and oppression (or obstruction) in the thorax, vague pains in the chest-walls, principally under the clavicles," &c.

"Another interesting fact corroborating the above is the following:—We have observed that persons who take the waters of Eaux-Bonnes very readily contract catarrhs, especially the first time they use them. In persons already affected with chronic irritation, more or less deep-seated, of the respiratory apparatus, the least cold produces bronchitis and pulmonary congestion. This medicinal catarrh is smartly acute, and terminates quickly by an easy, opaque, critical expectoration. There is no obstinate bronchial expectoration in a natural disease, in which the water is administered where a substitutive catarrh does not occur, which once terminated, so modifies the bronchial mucous membrane that the sulphurous waters can then be borne in larger doses, while even the vicissitudes of atmospheric temperature can be borne with impunity."

The waters even produce hæmoptysis, but Trousseau and Pidoux say that this artificial or medicinal hæmoptysis is of no moment; it ceases of

itself, requires no special treatment, and no more interferes with the progress of the case than to make the waters better borne after it is gone. It is easily distinguished from the hæmoptysis which occurs in phthisis. A more recent writer, Dr. Leudet, in the *Practitioner*, describes the same thing.

Having thus seen the remarkable physiological action of these waters upon the respiratory apparatus, let us see what diseases Troussseau and Pidoux say they cure. They go on to state that "lengthened clinical experience pronounces the efficacy of these waters in--1. Susceptibility to catarrh of the isthmus faucium, of the larynx, and of the bronchi, especially the latter; 2. Chronic inflammation and confirmed catarrh of these organs, whether simple or spasmodic, whether co-existing or not with emphysema; 3. In follicular or glandular sore throat (*angine granuleuse ou glanduleuse*); 4. Phthisis. We do not speak especially (*nous ne parlons pas*) of chronic pleurisies, of empyema with or without fistula, of vomices incompletely cured, and of all the remains of serious inflammations of the respiratory organs." They then go on to say: "What strikes one most markedly, after a careful clinical study of the action of the waters of Eaux-Bonnes, is the profoundness of its action (*profondeur*). We would say that these waters affect the most deep-seated and elementary particles of the animal organism. They penetrate very deeply; they go to the basis of organization. It is for this reason doubtless that their effects are so stable and lasting;" and for this reason also, that they are not only useful in the diseases above named, but also "in pulmonary phthisis, a constitutional malady localized in the lungs, and characterized by the formation, softening, and suppuration of tubercles in the degenerated tissue of these organs. It is against this so serious alteration that the mineral waters of Eaux-Bonnes show a power with which none of our official drugs can compare."

Persons who have constitutional syphilis, who seem perfectly well, but are not really cured, experience, under the use of these waters, an outbreak of the constitutional malady, but the continued use of the waters soon ceases to be so troublesome, and the subsequent employment of mercury or iodide of potassium has a beneficial effect in the direct ratio of the severity of the syphilitic "explosion."

It is interesting to note also that Galen used to recommend patients with phthisis, in which term he probably included cases of chronic bronchitis with profuse expectoration, to live near Mount Etna, that they might inhale the fumes of sulphur.

This action of sulphur which we have seen so beautifully shown in the action of the sulphurous waters of Eaux-Bonnes, confirms our provings, and sulphur is with us a remedy much used in chronic bronchitis, with much expectoration and shortness of breathing. And you could not fail to observe how homœopathic are the remarks of Troussseau and Pidoux, just quoted. They state the value of these waters in cases precisely similar to those produced in the healthy body by them. Chronic bronchitis is now well known to be not infrequently so associated with or caused by

the gouty diathesis, that such cases are not thoroughly cured without some anti-gouty treatment. This fact has lately been much dwelt on by allopathic writers, who use *iodide of pot.* in these cases. In such cases *sulphur* is of the greatest service. We do not see these cases in Scotland so frequently as in England, owing to the less frequent occurrence of gout. The association of asthma with gout and with skin diseases is now also well known, and has a marked bearing on the *psora* theory. In such cases especially, and in asthma generally, *sulphur* is a valuable medicine.

We do not use it in phthisis so much as some other drug; and it is in the chronic cases of phthisis, without fever or high temperature, where it is of use.

I cannot do better than quote a passage from Dr. Hughes (*Pharmacodynamics*, art. *Sulph.*), where he speaks of this point, and of the cases suited to the use of *sulphur* :—

“Dr. Bayes praises it in phthisis when the skin is eruptive. As regards this disease I would again refer you to Dr. Leudet’s interesting paper. While showing that the good effects of the sulphurous waters are principally due to their local affinity and substitutive action, he goes on to say that the forms and varieties of phthisis in which they are most beneficial are those in which ‘the patient is not only phthisical, but something else besides—rheumatic, gouty, or herpetic.’ These old ‘organic habitudes,’ he says ‘are stirred up and brought to life by the sulphurous medication. They had been vanquished by the more destructive and fatal tubercular diathesis; but now, revived, they in turn prove antagonistic to it, and suspend its course.’ “This,” as Dr. Hughes remarks, “is just the antipsoric use of *sulphur* in other words.”

Here I may remind you of the action of the vapour of sulphurous acid obtained either from inhaling the fumes of burning sulphur, or by inhalation in the form of spray of the sulphurous acid, and all are familiar with the choking feeling and the spasmodic cough produced by accidentally inhaling the fumes of a lucifer match. You have great laryngeal and bronchial irritation, sense of oppression in the chest, and difficulty of breathing, with cough.

The use of sulphurous acid spray in chronic bronchitis was first brought into notice by Dr. Dewar, of Kirkcaldy. I have frequently found great relief produced in chronic bronchitis, especially of the asthmatic form, from this means, and you will see how purely homœopathic its action is. I have not time to go more particularly into this point.

In other cases of chest disease *sulphur* is of great value. Here again it is the chronic form of disease. After an attack of acute pneumonia, when the acute symptoms have subsided, but you find the consolidation slow to depart, you will decidedly hasten this process by the administration of *sulphur*. So also in pleurisy, when the effusion is slow of being absorbed by—say *bryonia*—*sulphur* helps this state well, and enables the absorption of the fluid to progress more rapidly.

Sulphur, in the provings, was also found to cause marked determination of blood to the head, and congestive headaches were frequently produced.

Therapeutically, there is hardly a single variety of chronic headache which is not benefited by a course of *sulphur* or by its intercurrent use, while you will often cure such with the aid of *sulphur* alone. A case I had not long ago illustrates this. A young girl complained of daily headaches, which she had had for months, always by day, and often at night as well, keeping her from sleep. She was cured entirely by a fortnight's use of *sulph.* 3, in pilules.

Lastly, I must mention an action of *sulphur* which is a very important one, and which was only recently brought to light by Dr. Cooper, of London, viz., as a remedy in some forms of intermittent neuralgia. The cases suited to this medicine are those where the neuralgic pain—chiefly of the trifacial nerve—comes on about mid-day and lasts for three or four hours, then goes off, to return at midnight, going off again about three or four a. m. I have myself repeatedly verified this virtue of *sulphur*, and have published several cases of its successful use. Only the other day I had an equally successful case of it.

You must see, from the sketch which I have given you of the action and uses of *sulphur*, what an extremely valuable medicine it is, and how much is lost by allopaths in their blind system of ignoring and sneering at homœopathic investigations, while it affords another of the numerous examples we have already had of the occasional use by the old-school of a homœopathic remedy given for homœopathic indications. In fact, as in the case of the most of the remedies we have considered in this course of lectures, it is useless from an allopathic point of view, except as a purgative; while, even then, it is specially selected as a purgative for cases in which the specific action of *sulphur* upon the rectum and in piles is called for.

Now, as to the dose and preparation of *sulphur*. Crude *sulphur* is indicated by the mark Φ , and triturations are made from this in the usual way, up to the 4th centesimal; after which it is prepared as a tincture. *Sulphur* is soluble in alcohol in about the proportion of one grain to the ounce.

This latter preparation has become of late rather a favourite form for prescribing *sulphur*, and has been known as the mother tincture, but it is now found that it is rather an uncertain preparation, as though the *sulphur* is thus soluble at the temp. of 60°, it is nearly all precipitated at the temp. of 32°. It follows, therefore, that it is not a tincture from which to prepare the dilutions. But as many may still prefer to use it, it is henceforth to be known as *tinct. sulph. f.* (fortissima.)

For myself, I rarely use any other dose of *sulphur* than the *tinct. sulph. f.* and the 3rd centesimal. Many physicians use in preference higher dilutions, as 6, 12 and 30; and it is one of those drugs which act well in all dilutions, but those which I first named will satisfy you in most cases.

In chronic constipation the 3rd or higher dilutions are best, while, when constipation co-exists with some other disease requiring special treatment, as in the case of cystitis I mentioned, I generally use the *tinct. sulph. f.* in pilule.

In most chronic disorders the 3rd or higher is best, while in more recent cases, in chest affections, and in intermittent neuralgia, the *f.* tincture is preferable.

Gentlemen,—In concluding this short, and necessarily incomplete course of lectures on the *Materia Medica*, you cannot fail to see how wonderfully the knowledge of the homœopathic principle of similars, as a guide to the treatment of disease, opens up, and throws a new light on an otherwise dry study. We have seen that, from our examination of the physiological action of the drugs we have gone over, there is hardly one which is of the least use on the allopathic principle; while on the principle of similars, these same drugs are of the highest value. And we have also seen that when any of these drugs have been employed by allopaths, as we have found that they have been to a large extent, they have used them homœopathically, generally unwittingly, and always unacknowledged. In fact, you must see that homœopathy offers the great key to the solution of the question—how to harmonize what at first sight seem contradictory facts. Treatment by similars is the only system of medicine which does harmonize these facts, and which points out the therapeutical use of remedies which on any other theory are simply useless or hurtful. Amidst all the chaos of old-school therapeutics, and the dependence on pure empiricism in its treatment, is it not something to have got hold of a principle or system for the treatment of disease in general? Having this principle to act upon gives you, in practice, double confidence in yourself and in your remedies, while the feeling of satisfaction continually recurs to one's mind that one is acting in accordance with *law*, and that we are honouring God, and are fellow-workers with Him, in carrying out the grand rule which he has so evidently given us for the cure of disease.

I thank you for your kind attention all through this course, which I hope to resume and complete during the winter session.—*The Monthly Homœopathic Review*, Sept. 1876.

चरकसंहिता ।

अवस्थानम् ।

सप्तमोऽध्यायः ।

पुण्यं यद्धो विषादत्वान्मनोवाक्कायकर्माणां ।

धर्माधिक्यानां पुण्यः सुखी भुङ्क्ते चिनोति च ॥ २८ ॥

यरीरेष्टा वा चेष्टा स्यैर्ध्यायां वलवर्द्धनी ।

देहव्यायामसंख्याता भालया तां समीचरेत् ॥ २९ ॥

स्वाच्छिखालगुडकपर्पाहगुराकर्षणादपि ।

आयामाह ह्यधाकानां व्यायाम इति शब्दितः ॥ ३० ॥

CHARAKA SANHITA.

CHAP. 7. SHARVIRECHANA SATASRITYA.

29. The righteous man, from the purity of the actions of his mind, speech and body, happily enjoys and accumulates virtue, wealth, and the objects of desire.

30. Whatever exertions of the body are agreeable, give firmness and strength, are called deha-vyáyāma (exercises or gymnastics). They should be practised in due measure.

31. In as much as from the lifting of heavy stones, wielding of clubs and bows, the limbs become extended, such exercises are called vyáyāma.

२० सौख्यं यद्धो विनोति पाठः ।

३० तां समीचरेदिति टीकाव्याख्यानः पाठः ।

गालेष्वप्यस्यमानेषु तेषु रक्तं विभज्यते ।
तद्गालेषु विभक्तं हि नांसीभवति मर्द्दनात् ॥ ३२ ॥

स्रोतःसु रज्जो वासुर्धः सचापि प्रतिसाध्यते ।
मावते प्रगुणीभूते सुखं गालेषु जायते ॥ ३३ ॥

कान्तिवर्णत्वमङ्गानां सुविभक्तत्वमेव च ।
प्रगुणोष्णसनिःश्वासचेष्टत्वमयने रश्मिः ॥ ३४ ॥

साधवं कर्मसामर्थ्यं स्थैर्यं क्षोयसहिष्णुता ।
दोषक्षयोऽग्निदृष्टिश्च व्याधीनादुपजायते ॥ ३५ ॥

कमदङ्ग्या सदारोन्मथरीवलापुटिदः ।
चारोन्मथलापुटिन्नः स एवाक्रमसेवितः ॥ ३६ ॥

32. When the body becomes thus exercised, the blood is equally distributed, and the blood thus distributed becomes converted into muscle by rubbing.

33. And even the wind, that has become incarcerated in the vessels, is freely circulated. The wind, thus put in proper condition, gives rise to a sense of ease in the body.

34. The limbs acquire loveliness and their (natural) color, and become sharply divided (marked off) from each other (from due development.) The acts of expiration and inspiration become easy. And the appetite for food increases.

35. Lightness, capacity for work, firmness, endurance, purification of the faults in the humors, and increased appetite are the result of exercise.

36. Exercise, gradually increased, gives rise to freedom from disease, increase of strength, and nutrition of the body. But if practised irregularly it is destructive of health, strength, and nutrition.

३५ दृढः स हि विदुतेति द्विवीचः पाठः ।

स्वेदागमः श्वासवृद्धिर्गताश्वातिसाववम् ।

श्वेतानुपरोधश्च इति व्यायामलक्षणम् ॥ ३७ ॥

श्रमः क्लमः श्वसृष्ट्या रक्तपित्तं प्रतोनकः ।

अतिव्यायामतः कासो प्वरज्जर्दिश्च जायते ॥ ३८ ॥

अरोगी जीर्णभक्तश्च नरो व्यायाममाचरेत् ।

नार्तिभीडाकरो देहे बलवान् श्लेष्मके गदे ॥ ३९ ॥

व्यायामोऽथ शरीरत्वात् स्वेदाच्च प्रविलायिते ।

श्लेष्मपि श्लेष्मका रोगा न भवन्ति शरीरिणः ॥ ४० ॥

अजीर्णित्वाभरतो व्यायामेनाकुलीकृतः ।

देहे विसर्पञ्जनयेद्रक्तपित्तमयान् गदान् ॥ ४१ ॥

37. Perspiration, increase of respiration, increased lightness of the body, and freedom from any impediment in the chest,—these are the signs of proper exercise.

38. Excessive exercise gives rise to lassitude of mind and body, exhaustion, thirst, breathlessness, cough, fever, vomiting.

39. One should practise gymnastics when free from disease, and when the food has undergone digestion. When the body is suffering from diseases of the phlegm, even violent exercise may not be very hurtful.

40. Exercise, by developing heat and by causing perspiration, destroys phlegm and thus prevents diseases due to it.

41. But exercise in persons whose food has not been digested disturbs the chyme, and diseases of the blood and bile arise from its dispersion in the body.

‘ अतिव्यायाममारुध्यकर्म्मभिश्चातिकर्षिताः ।

क्रोधयोकमवायासैः क्षान्ता ये चापि मानवाः ॥ ४२ ॥

वार्त्तदृष्टाः प्रधाताश्च ये चोच्चैर्वैद्यभाषकाः ।

ते वर्जयेद्व्यायामं तृप्तिताः क्षुधिताश्च ये ॥ ४३ ॥

अतिव्यायामतो रोगी मानवानां भवन्ति हि ।

हतमांसरसचीरवक्षिभिस्तानुपाचरेत् ॥ ४४ ॥

व्यायामहास्यभाष्याध्वप्राप्त्यवर्णप्रजागरान् ।

नोचितानपि सेवेत बुद्धिमानतिमात्रया ॥ ४५ ॥

एतानेवंविधांश्चान्यान् योऽतिमात्रं निषेवते ।

गजः सिंहमिवाकर्षन् सहसा स विनश्यति ॥ ४६ ॥

42. Those, who have become enfeebled by excessive exercise, by carrying heavy weights, or by long journeys on foot ; as also those, who have become exhausted by anger, grief, fear, exertion ;

43. As also children and old people, and those who have to talk loud and long, as well as those who are thirsty and hungry ; (all these) should avoid exercise.

44. The diseases, which arise from excessive exercise, should be treated with ghrita, juice of meat, milk, and injections.

45. Exercise, laughter, talking, walking, sensual intercourse, keeping nights,—these, though proper in themselves, should never exceed a certain limit.

46. He, who does these and other similar acts in excess, meets with sudden death, just like an elephant who attacks a lion.

उचित्तादृशिताद्भीमान् क्रमयो विरमेधरः ।

हितं क्रमेण सेवेत क्रमश्चातोपदिश्यते ॥ ४७ ॥

अधोपाधये ताभ्यां क्रमः पादांशिको भवेत् ।

एकान्तरं ततश्चोर्ध्वं चान्तरं त्रयन्तरं तथा ॥ ४८ ॥

क्रमेणापचिता दोषाः क्रमेणोपचिता गुणाः ।

सन्तो यान्यप्युपनिषन्मप्रकाश्या भवन्ति च ॥ ४९ ॥

समपित्तानिलकफाः केचिज्जर्मादि भानवाः ।

दृश्यन्ते वातलाः केचित् पित्तलाः श्लेष्मलास्तथा ॥ ५० ॥

47. The intelligent man should give up gradually any thing injurious that has become a habit, and should only gradually accustom himself to anything that is beneficial. Of this gradual process I shall speak below.

48. This gradual process consists in adding and diminishing by one fourth of the quantity at intervals of one, two, and three days till the whole quantity of the injurious food is given up and an equal quantity of the salutary food is taken.*

49. Thus the injurious food by gradual reduction will be entirely given up, and the salutary food by gradual increase will become the habitual food.

50. Some men are born with equal proportions of bile, wind and phlegm ; some with excess of wind ; some with excess of bile ; and some with excess of phlegm.

* Suppose one takes a certain quantity of a particular kind of food which is either injurious or not quite salutary. To replace it by an equal quantity of other more salutary food, one should proceed this wise :—he should commence by reducing the habituated food by one fourth, and replacing it by an equal quantity of the more salutary food, then on the third day he should reduce the first kind to one half, replacing the reduced quantity by an equal quantity of the other food, allowing two days to intervene between this and the next reduction, after which he should allow three days to intervene, after which one food would be entirely replaced by the other.

ते धाननातुराः पूर्वे वातसाद्याः सदातुराः ।
 दोषानुप्रविताः श्लेष्मा देहप्रकृतिरुच्यते ॥ ५१ ॥
 विपरीतगुणश्लेष्मां स्वस्थत्वेर्भिधिर्हितः ।
 समदर्पणं सात्त्विकं यमधातोः प्रयस्यते ॥ ५२ ॥
 द्वे अद्यः सप्त चिरसि स्थानि श्लेष्मण्यनिच ।
 मत्साधनानि वाध्यन्ते इटैर्मात्राधिकैर्मलैः ॥ ५३ ॥
 मलवृद्धिं युक्त्येन साधयामाससंशयम् ।
 मत्साधनानां बुध्येत सङ्गोत्सर्गादतीव च ॥ ५४ ॥

51. Of these the first are healthy ; the rest are always out of health, inasmuch as their constitutions are in their nature or composition associated with the primary faults, that is inequality of the humors (which is the cause of disease).

52. Of these (that is of those who are thus born unhealthy) food of opposite qualities to their constitutions is advisable as tending to health. To those who are born healthy food consisting of all the tastes are wholesome.

53- The outlets for the excretions are the two in the lower part of the trunk, the seven in the head, and all the outlets of the sweat. These outlets become obstructed by either perverted or excessive secretions.

54. Heaviness of these outlets is indicative of increased secretion ; lightness of deficient secretion ; deficient and excessive discharges one likewise indicative of deficient and excessive secretion respectively.

५१ देहप्रकृतिरुच्यते । इति द्वितीयः पाठः ।

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VOL. VIII.] **Nov. 1876.** [NO. 5.

THE ETIOLOGY OR CAUSATION OF MALARIOUS
FEVERS, WITH ESPECIAL REFERENCE
• TO THE FEVERS OF BENGAL.

The greatest scourge of Bengal, greater even than Cholera itself, is the so-called Epidemic Fever. It is difficult to say, if Bengal has ever been free from this fever, some part of it or other having been at one time or another under the devastating influence of the disease. The disease is gradually becoming more and more wide-spread, and within a quarter of a century it has become so much so, that in Lower Bengal at least health may be said to be unknown.

The cause of such a wide-spread epidemic must be equally wide-spread, but it is demonstrably local. We must therefore seek it in the soil, including the waters in it and upon it. For even if the poison or agent which gives rise to the fever in question be aerial, or rather be such as to float in the atmosphere, still from the fact of its being confined within a limited area, however large that area may be, it must be acknowledged to own a terrestrial origin.

What this cause is it will be our endeavour to trace. To clear the way we publish the following Reports of the two Committees, one appointed to investigate the cause of the unhealthiness that followed in the wake of the Jumna Canal, and the other appointed to investigate the cause of the Bengal Epidemic itself. As these Reports have become scarce, and as they contain much valuable matter, we trust their reprint here will be exceedingly useful to those who take interest in these subjects.

REPORT of a COMMITTEE assembled by General Orders Commander-in-Chief, dated 16th September, 1845, under Instructions from the Right Honorable the GOVERNOR-GENERAL of INDIA in COUNCIL.

THE conduct of the investigation intrusted to our Committee, and detailed in the annexed General Order, involved the necessity of personally examining the districts irrigated by the existing canals, and such other localities as seemed best suited for a fair comparison with them. For this purpose, the Committee met at Kurnaul on the 30th November, 1845, and proceeding southward had made considerable progress in the examination of the irrigated districts west of the Jumna, when they were summoned to military duty with the army of the Sutlej. On the 1st of November, 1846, the inquiry was resumed, and has continued without further interruption.

2nd. The route followed by our Committee may be traced on the accompanying sketch map. It was prescribed in some measure by the official engagements of Major Baker, whose inspection of the canals, &c. was necessarily performed in conjunction with his duties as a member of the Committee. It will be seen, that we have examined the irrigated and unirrigated districts on both banks of the Jumna, that we have visited the Nujufghur jheels, and have followed the proposed course of the Ganges Canal for 83 miles, viz., from Hurdwar to the latitude of Meerut. In the course of this inquiry, we have travelled about 1,400 miles. We have visited more than 300 inhabited localities, and have personally examined upwards of 12,000 individuals of all ages.

3rd. It was suggested by our medical member, and will be generally admitted, that a fair comparison of the sanitary condi-

tion of different districts must be founded on observations taken within a very brief period of each other, and under circumstances as nearly as possible similar. The observations taken in 1845 were, therefore, useless for our present purpose, and the necessity of completing our inquiry within a period limited to about three months, compelled us to restrict our observations to the bodily condition of the people and to those more obvious circumstances which all modern authority concurs in pronouncing to be those most concerned in the production of disease.

4th. In the commencement of our investigation, we had hoped to derive much assistance from the results of inquiries conducted by our own native agents, and at our instance by the establishments of the revenue and canal departments. We have now before us an immense mass of reports obtained from such sources, but they are in general so vague and unsatisfactory, and are so little corroborated by our own personal observations, that we were unwilling to incur the labour involved in arranging and digesting them, with so little prospect of ultimately obtaining trustworthy results.

5th. Our principal object was to ascertain what relation subsisted between certain physical conditions of the different districts, and the liability of their inhabitants to miasmatic fevers. The former could be noted with some degree of certainty; but in the absence of official medical statistics, and frequent reason to doubt the accuracy of oral testimony, although collected by ourselves, we could not obtain even an approximation to a fair comparison of the past and present sanitary condition of the inhabitants of different localities. In this difficulty, it was suggested by our medical member, that the condition of the spleen in any number of individuals would be a fair test of the probable frequency and degree in which they had suffered from malarious influences. Having satisfied ourselves of the propriety of this test, and finding it easy of application, we determined to adopt it, and have based on the results so obtained the most important of the conclusions at which we have arrived. In the Appendices B and C, will be found a memoir by Mr. Dempster, stating the medical grounds for the adoption of this test, and describing the method followed in applying it.

6th. The present season, in which our observations were taken, has been a generally healthy one, and was preceded by a

season scarcely less favourable. It is also separated by eight or nine years of good harvests from a season of drought, a circumstance decidedly in favour of unirrigating villages which have had abundant time to recover from any sickness that might have been entailed upon them by the unmitigated hardships of famine.

7th. Amongst the instructions furnished for our guidance from the Adjutant-General's office, we find a series of questions, on each of which his Honor the Lieutenant-Governor, North-Western Provinces, has called for our recorded opinion. These questions embrace nearly all the important points of our investigation, the results of which cannot perhaps be shown in a more intelligible form than that of consecutive answers to his Honor's interrogatories, as follows :—

8th.—FIRST. *How far is the unhealthiness which has prevailed of late years at Kurnaul, Delhi, Hansi, Hissar, and Rohtuck, and in the villages irrigated from the canal, attributable to the existence of the canal, and to irrigation from it ?*

Reply I.—We have obtained satisfactory proof that an extensive epidemic influence, in whatever it may have consisted, or however produced, undoubtedly pervaded a large portion of the North-Western Provinces of late years, and especially during and after the rainy season of 1843. To this we would partly attribute the sickness which occurred in the

canal irrigated districts, where, however, it is also certain, that the disease was generally, though not universally, more prevalent and severe than in other situations.

9th.—SECOND. *Did similar unhealthiness prevail at the same time in other parts of the country not irrigated from the canal and beyond its influence ? If so, to what cause is that unhealthiness attributable ? Was the type of disease in the two cases*

Reply II.—Nearly all places within the North-Western Provinces also suffered from fever at the same time, and in a degree greater than usual. We have, moreover, every reason to believe, that in certain situations neither irrigated from the canal nor within reach of its influence (as at Kythul, in the vicinity of the Nujufghur jheels, and in the khadir of the Jumna, &c.), fevers

prevailed to an extent and with an intensity, as great as in the

worst of the canal villages. The season of the year at which the disease appeared, its symptoms, progress, and consequences, would mark it to have been everywhere of the same type, viz., the endemic (remittent and intermittent) of the rainy season, but everywhere, and especially in naturally malarious localities, greatly aggravated by the constitution or peculiarity of the season.

10th.—THIRD. *If you consider the canals to have been the cause of unhealthiness along their course, have you any grounds for thinking such to be the unavoidable result of canal irrigation or is it attributable to other causes, such as intercepted drainage, flooding from canal, peculiarity of the soil irrigated, &c.?*

Reply III.—By far the greater part of the evils we have observed have not been the necessary and unavoidable results of canal irrigation. In all situations where mischief was prominently marked, the natural drainage of the country had been checked or interfered with, stiff and retentive soils saturated with water, and natural disadvantages of site enhanced by excess of moisture.

11th.—FOURTH. *Can you suggest any means whereby the agricultural benefit of canal irrigation may be continued to the country at large while military cantonments or large towns may be saved from the risk of unhealthiness?*

Reply IV.—The effects of canal irrigation appear to be remarkably local, almost strictly so; three miles would probably be a safe distance; but if irrigation were prohibited within a circle of five miles radius round a large military station, its salubrity would not in our opinion be affected.

12th.—FIFTH. *Can you suggest any change in the lodging or mode of life of the agricultural population within reach of canal irrigation which would render them less liable than at present to any unhealthy influence occasioned by the canals?*

Reply V.—We feel doubtful whether any suggestion proceeding from authority, as to mode of life, exposure, food, clothing and construction of houses, would be adopted and voluntarily practised by the agricultural population. The best and most efficient prophylactics of this class, naturally come with competence and ease, but much might be done to improve the

salubrity of village sites, viz., to stop irrigation within 200 yards round all canal villages, and to plant a double row of trees round the unirrigated space; to deepen all good village tanks and to keep them full of water all the year round; to drain all shallow pools in or about villages, or to convert them into proper reservoirs of water; and, wherever it may be possible, to improve the drainage of village sites. It would be no hardship on a new canal to make such works an invariable condition of obtaining water for irrigation. Cleanliness is of much, though not of such vital importance as the measures above recommended; but we fear no rules on this subject could be generally enforced.

13th.—SIXTH. *Looking to the circumstances of the Eastern Jumna or Saharunpoor Canal, do you find that the effect of the canal irrigation on the health of the inhabitants has been the same there as on the West Jumna or Delhi Canal? If not, how do you account for this difference in effect?*

country has been greatly obstructed, and the soil is generally more stiff and clayey, the effect on the health of the inhabitants has been the same in kind, and nearly in degree, as in the objectionable portions of the Delhi canals.

14th.—SEVENTH. *Do you suppose that the contemplated Ganges Canal will or will not exercise an injurious effect on the health of the people of the Doab, over the whole of which it is intended to extend its influence? If you are of opinion that it will, can you propose any remedy or palliatives which will not involve the entire abandonment of the undertaking?*

Reply. VI.—The Eastern Jumna Canal furnishes examples of some of the best and worst results of canal irrigation. In the north and south divisions, where the soil is light, the drainage perfect, and irrigation carried on chiefly by “Rajbhuas,” we perceive all the blessings and scarcely any of the evils of a canal. But in the centre division, where the drainage of the

Reply VII.—In the course of our inquiries on the existing canals, we have found salubrity to depend in a great measure on the nature of the soil and the efficiency of the surface drainage. In the districts which it is proposed to irrigate, the obvious geographical features of the country enable us to pronounce with some confidence, that an efficient drainage, if not everywhere existing, is at least generally attainable. On the proposed line of the

canal from Roorkee to Meerut, we observed the soil to be light and friable; but without an extended examination, we cannot pronounce what proportion of the remaining districts of the Doab is characterized by similar soil. It can scarcely be hoped, however, that in the whole length of the proposed canal and its branches, some localities will not be met with, naturally and irremediably unfavourable to irrigation, and in which disease analogous to that found on the existing canals may not be expected to develop itself. On the other hand, if attention to drainage be made an absolute condition of participation in the benefits of the canal, an improvement rather than a deterioration of the general salubrity, may, in many instances, follow the introduction of canal irrigation. On the whole, we consider ourselves warranted in anticipating, on the Ganges Canal, a far less amount of contingent evil than has been experienced on those of the Jumna, which were originally constructed without reference to many important points which have been especially kept in view in projecting the present work. And more especially in drawing inferences from results on the Delhi Canal, great allowances should be made for the natural disadvantages of the country through which it flows—when compared with the Doab generally. It is a remarkable feature of the “bangur” land bordering the right bank of Jumna, that its drainage flows from, instead of towards, that river. The slope of the country, which is to the south-west, amounts to 1 foot or 1 foot 6 inches per mile, and is not sufficient to prevent even a slight obstruction from interfering with the flow of water. In subordination to the general slope, there are minor undulations, the excess of slope in one part being compensated by the absolute want of it in another. In such cases, the drainage of the higher lands collects in the lower, and from the latter there is no efficient escape. This is exemplified on a large scale in the Nujufghur jheels, and to a less degree in many other localities. The Doab, on the other hand, is intersected by deep depressions, sometimes with the character of valleys, sometimes of ravines. These, except in a few instances, receive and rapidly carry off the surplus water of the country.

15th. With reference to the latter part of this question, we have prepared a memorandum of measures connected with the

execution of the Ganges Canal, which we would strongly urge upon the attention of Government. With the details of these measures, which are of a technical nature, we have not encumbered this report, but they will be found in Appendix F.

16th. In addition to the above replies, it is proper to state our opinion of the effects produced by canals on the population of the irrigated districts, as regards their enjoyment of life and physical efficiency as agricultural labourers. During the cold season of 1846-47 (a healthy year), no obvious bad effects were perceptible in the adult population. The men generally looked healthy, happy, and thriving. The autumn crops were all gathered in, and the spring crops sown. The villagers on the Western Jumna canals are better clothed and housed, and have more appearance of wealth and comfort than those off the canal. In a few of the worst localities the aspect of the children was decidedly sickly; they were puny and pot-bellied. It must further be borne in mind, that our observations were made at a favourable season, and that we not only refrained from calling for the sick, but systematically discouraged their being brought forward.

17th. In our examination of districts unconnected with the canals, we have included some in which well irrigation is habitually practised, and in which we have found the population in a slight degree more subject to malarious diseases than in the totally unirrigated districts. We would, however, hesitate in attributing this difference to the mere circumstance of irrigation. It may perhaps be as justly ascribed to the abundance of springs and limited depth of wells, which are essential conditions of extensive well irrigation.

18th. In endeavouring to account for the observed difference of salubrity between well and canal irrigation, we beg to point out some material differences in the circumstances under which they are severally practised. Well irrigation is chiefly resorted to during the healthy season of the year; the water obtained with labour is used with economy, and the natural moisture of the soil is not increased by the water being transferred from a lower stratum to the surface. Canal irrigation, on the other hand, is practised throughout the year, being applied even during the rainy season to the cultivation of rice. The water being more easily obtained, is more likely to be used in excess, and

such portion of it as may be absorbed by the soil increases by so much its natural humidity. It may be added that foreign alluvial matter is more likely to be held in suspension in canal water than in that obtained from wells.

19th. The pecuniary advantages of canal irrigation, both to Government and to the farmer, are, we believe, fully recognized, and are so well understood by the cultivators themselves that they would willingly take their chance of the contingent evils of irrigation, in order to secure its benefits. Of this we saw abundant proof in the course of our investigation. It would, however, have been an important test of the national value of canal irrigation could we have accurately ascertained its effects on the density of the population, and whether the augmented capacity of the soil for supporting life compensated for the increased activity of influences inimical to its duration. In the hope of determining the question we obtained from the revenue authorities certain returns, of which an abstract will be found in Appendix G., and which show a marked difference in favour of irrigated lands. It is, however, to be regretted that the census forming the basis of these returns was taken several years ago, and may therefore not be strictly applicable to the existing condition of the country.

20th. In the foregoing paragraphs we have confined ourselves to general conclusions, fearing lest, by entering on the consideration of local details, we should extend our report to an inconvenient length. But our attention having been particularly called to the station of Kurnaul, we beg to offer a few remarks showing briefly the causes to which we attribute the late sickness at that station, and the extent to which they may be removed or palliated.

21st. The insalubrity of Kurnaul has been ascribed to various causes: To the prevalence of an epidemic influence of late years over the North-Western Provinces—to its proximity to the Jumna khadir on the east, and to the unhealthy flats of Kythul on the west—to the stiff and retentive nature of its soil—to the swamps bordering on the canal—to the extent of rice cultivation—and to the naturally imperfect drainage, being still further obstructed by the canal embankments. Each of these causes, and especially the first named, have, in our opinion, contributed

to the unhealthiness of Kurnaul. Some of them are obviously irremediable, but we are satisfied of the practicability of reclaiming the canal swamps, of improving the surface drainage by carrying off the superfluous water under the canal by two tunnels to the Jumna, and of prohibiting irrigation within two miles of the cantonment pillars. We have no doubt that the adoption of such measures would be attended with beneficial results; but believing that the level of the springs has been permanently altered, and the under strata of the soil saturated with moisture, we cannot confidently prognosticate, that they would ensure the complete restoration of salubrity.

22nd. In the foregoing paragraphs, we have confined ourselves to general conclusions, purposely omitting the chain of induction by which they have been formed on the observed facts, as recorded in the figured abstracts in the Appendix E. A full discussion of the complicated considerations which have influenced our opinions would have extended this report to an undue length, and might probably have hindered rather than facilitated the formation of a correct judgment on the important question at issue. The facts, however, are recorded for reference, and will be found, on careful examination, to support our opinions.

23rd. In conclusion, we beg to record our obligations to the Honourable the Lieutenant-Governor, North-Western Provinces, for the assistance he has afforded us, both privately and officially, in the prosecution of our inquiries. On his requisition we have received from the Madras Government a report on a remarkable epidemic that pervaded the southern districts of that Presidency in 1809, 1810, and 1811, an abstract of which will be found in Appendix H., and at his suggestion we have obtained the appended reports from Drs. Kier and Collyer, showing that tank irrigation, as practised in certain districts of Rajpootana, is consistent with a high degree of salubrity. These documents possess much interest with reference to the subject of our inquiry, and have had their due influence on our general conclusions.

(Signed) W. E. BAKER, *Major, Engineers,*
President.

(Signed) T. E. DEMPSTER, *Surgeon, 1st Brigade,*
Horse Artillery, Member of Committee.

I fully concur in the substance of this report ; but as a change in my ordinary duties, since I was appointed a member of this committee, has prevented my taking any active share in its proceedings, my signature here is merely formal.

(Signed) H. YULE, *Lieutenant, Engineers,*
Member of Committee.

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Appendix A.

I WOULD willingly have confined myself strictly to the facts before our Committee, did I not consider it necessary, in order that these very facts should have due weight and consideration, first, fully to meet an argument often advanced by intelligent persons interested in canal irrigation, and believed by them so unanswerable, as alone to prove the doctrine of malaria a mere fiction of medical writers, and to render all further inquiry unnecessary, viz., that some marshes can be pointed out which do not cause fevers to any extraordinary extent ; and some perfectly dry localities, where fevers of a very malignant nature abound.

That certain local peculiarities are *generally* connected, as cause and effect, with certain diseases of the human body, is no hypothesis of any set of medical speculators, but a belief which has forced itself on the conviction of mankind in various ages and countries. What those conditions are which are essential to the production of endemic disease, and what are accidentally associated with them, how the poison is evolved, and what are its sensible properties and chemical composition, have indeed furnished ample grounds for medical speculation and controversy ; but the general proposition itself is as fair and legitimate an induction from observed facts as any within the whole range of science.

Exceptions do not confirm a rule, but neither do they overturn a fair induction. They only show that our knowledge is incomplete, and the whole law of the case not fully understood. If, in the exact sciences, residual phenomena are constantly occurring ; something happening which was unlooked for ; something expected which does not take place ; how much more may they

be anticipated in such a science as medicine, where the sources of error are at once so numerous and perplexing ?

Mankind, not physicians alone, have agreed that typhus fever is a highly contagious disease. Suppose (what would not be difficult) that I collect a dozen authentic cases of persons who have freely exposed themselves to this contagion, and who, notwithstanding, entirely escaped the disease ; am I therefore to shut my eyes to the thousands of instances in which the complaint was communicated under like circumstances, and to reject the whole doctrine of contagion as untenable ? Surely this would be generally condemned as a dangerous and inexcusable error ! The human race have, at least, as deep a concern in the laws of malaria as in those of contagion.

It is a remarkable and most important fact, that the diseases believed to arise from malaria are, beyond all comparison, more prevalent during and immediately after the periodical rains in India than at any other season of the year ; and that this is precisely the time when the conditions everywhere alleged to be necessary to the production of that poison, are also, beyond all comparison, most abundant. At some places there may be more, and at others less ; in some years more, and in others less ; but the truth of the general remark may be verified, in this country, at all places, and in all years.

When we remember the feeble affinities which hold together the constituents of vegetable matter, the numerous and totally dissimilar combinations into which they may enter, and the seemingly trifling accidental circumstances which may determine the nature of the new compound, it is not unreasonable to believe that a *something* capable of causing human disease may be evolved during the decomposition of such substances, under the action of heat, moisture, and electricity ; or to conceive, that unappreciable, or at least unnoticed modifications of these conditions, or of the chemical state of neighbouring bodies, may alter the nature of the expected product, and obstruct the formation of the poison when most confidently looked for. For instance, we may make all the usual arrangements for vinous fermentation ; an unexpected and unobserved change takes place in the temperature or electric condition of the atmosphere, and *vinegar*, not wine, is the result. Is malaria alone to be a constant and un-

varying product of such complex operations, even though all the ordinary conditions are apparently present?

Again, if we admit that a certain class of fevers arise from malaria, does it necessarily follow that all endemic fevers must originate in the same cause, or that all malaria is necessarily one and the same? Or who has demonstrated that malaria, like carbonic acid gas (an aëriform fluid, to which in some points it bears a striking analogy), may not be evolved under several and very different apparent conditions?

All our previous knowledge and experience would lead us to suspect some mischief from irrigating canals in such a climate as that of India, especially, if not expressly constructed so as to preserve the drainage of the country, and effectually to control the immoderate use of the water; and all I contend for is, that the question be tried and decided by the facts strictly bearing on the case before us, and not by a few exceptions, however striking or inexplicable, found in other distant situations or countries.

(Signed) T. E. DEMPSTER, *Surgeon, 1st Brigade, Horse Artillery,*
Member of Committee.

Appendix B.

THE first indispensable step in the present inquiry was to obtain some certain mode of determining the relative salubrity of different districts irrigated by the canals, irrigated by wells, or altogether unirrigated. In most European countries at the present day this would have been easy enough, by the mere comparison of the known medical statistics of the several localities under examination; but in India the difficulties were at first sight almost insurmountable. Here we had no record of diseases, births, deaths, and population to which we could refer. A native's account of the healthiness of his own town or village, even for one season, is the loosest and most vague of statements, and if employed to collect positive data, his written report is not a whit more to be depended on. The aspect of the people is always a matter liable to error and difference of opinion; and the important subject of longevity cannot even be approached, for no native knows his own age correctly, least of all those advanced in years. The records of military hospitals were good

and valuable data as far as they went; but they applied only to a few widely distant points, and referred to a class of subjects, differing in all important particulars from the native inhabitants of the towns or the agricultural population of the country.

In this difficulty, it occurred to me that the inhabitants of malarious countries, but especially the native inhabitants of unhealthy districts in India, often carry in their own persons a record of past suffering, which can at all times be easily read, and which no one can either falsify or suppress. This is enlargement of the spleen, a disease to which the native of India is peculiarly liable, and which, if not the invariable consequence of miasmatic fever, is so constantly associated with it, that the one may (on the large scale) be safely taken as the measure of the other, or at least of that malaria from which both unquestionably spring. But as this is a test which has never before (to my knowledge) been used for the same purpose, and as many of our conclusions are based on the results with which it has furnished us, I trust I shall be permitted to enter somewhat fully into the subject.

There is no fact more generally known or unhesitatingly admitted by medical men, than that disease of the spleen is one of the most frequent consequences of malarious fevers. To enumerate all the authorities on this point, would be to quote most of the respectable writers on these subjects; but that Government may appreciate the value of the test I chiefly depend on for the purpose of determining the comparative intensity of malaria in different localities, it will be proper to cite a few passages from two recent and well-known works, by authors, respectively, of European and Indian experience:—

“In moist countries, whether warm or temperate, they (diseases of the spleen) are endemic, as in Italy, Holland, South America, and some parts of India; *in fact, wherever malaria exists.*”

“The most frequent causes of enlarged spleen are ague and remittent fever.”—*Cyclopædia of Practical Medicine.*

“The most part of the cases of vascular enlargement of the spleen in this country (Bengal) follow intermittent and remittent fevers, and tumid spleen may be stated as the most invariable consequence of acute and debilitating disease among children of weak constitutions in Bengal.

“The assemblage of constitutional symptoms described in the foregoing pages constitutes *the endemic cachexia of those tropical countries that are subject to paludal exhalations*; the enlargement of the spleen is the most frequent attendant on that cachexia; and its increase or subsidence generally corresponds with the unfavourable or favourable changes which are taking place in the constitution.

“Disease of the spleen is much more frequent in those years in which the most obstinate, fatal, and protracted remittents prevail. . . . The history of the fevers of St. Domingo and of Minorca by Jackson and Cleghorn shows how frequently disease of the spleen is connected with the autumnal fevers of these countries. But great heat is not essential to the production of that disease. It is the autumnal endemic of Holland, of the low parts of Hungary, of the marshes of Lombardy; and it is by no means rare in the fens and marshes of England. In fact, enlargement of the spleen is *frequent wherever intermittent and remittent fevers prevail*.”—*Twining's Diseases of Bengal*.

Such passages might be multiplied to a great extent; but the above will, I hope, suffice to establish the value of this kind of evidence, as a probable measure of the existence and intensity of malaria in any particular situation.

I may here remark that *Ague cake*, the name by which enlarged spleen is commonly known to the country people in the fenny districts of England, is a happy translation of *Tup tilles*,* the words used by the up-country Indian peasants to express the same disease.

Although the intimate connection between malarious fevers, and organic disease of the spleen is established beyond a doubt, it never was supposed that these diseases bear an *exact* proportion to each other, or that the number of enlarged spleens in any particular situation, should correspond precisely with the number of attacks of fever suffered by its inhabitants. Many fevers occur (especially if the attacks have been slight and not often repeated) without being followed by enlargement of the spleen; and many tumid or slightly inflamed spleens become natural in size and structure, soon after the fever has passed off. On

* Literally, fever spleen.

the other hand, the spleen may become enlarged from other causes, and in persons who have had no distinctly developed paroxysm of fever, although living in a malarious locality. Such cases, however, are, according to my experience, comparatively very rare.

When I first began to apply this test, I was not aware of its full value. I did not then know the extraordinary susceptibility of the natives, especially the native children of these provinces, to disease of the spleen; nor could I, before trial, have anticipated the facility with which it points out the relative splubility of different situations, and at once detects unhealthy localities, which could not otherwise be discovered without the experience and observation of several seasons.

It must not, however, be supposed that this disease exists *everywhere* to a considerable extent, among the inhabitants of the North-Western Provinces. Places in close proximity, but in otherwise different local circumstances, exhibit the most wonderful differences in this respect; and in some extensive tracts of country, the complaint is scarcely to be met with. On the other hand, it is important to guard against exaggerated notions of the physical condition of the inhabitants of certain situations where so large a proportion are afflicted with this description of organic disease.

Enlargement of the spleen is the least formidable of all organic diseases of the viscera; and is chiefly important as a symbol of another complaint, which generally has preceded, and may come after it. The lesser varieties, and which also form the great mass of the cases registered, may consist with every outward *appearance* of health and vigour. In most places where the disease is common, some strikingly healthy-looking men and children were found with decided enlargement of the spleen. But the larger varieties, of which but a comparatively small number are recorded, were usually accompanied with a sickly (cachectic) aspect.

Other diseases besides fever arise from malaria, and other consequences than spleen follow severe and protracted attacks of fever; but most of these can be effectually concealed, and none can be detected with such ease and certainty as enlargement of the spleen. Indeed, without this test, our whole inquiry must

have ended in vague and unsatisfactory conjecture, and without a single fact, collected among the agricultural population on which we could depend.

I have no wish to exaggerate the true and legitimate value of the spleen test, nor do I venture to assert that it will indicate the presence of the remote causes of *all fevers*, or even of all pure endemic diseases of this class. There may be different kinds of malaria, giving rise to fevers of different types, and having different complications and consequences; or common continued and typhoid fevers may become mixed up with, and modified by, fevers of local origin. All these are worthy subjects of future inquiry. But from what I have lately witnessed, I am fully persuaded, that it will be found a true and faithful comparative measure of *marsh malaria* in its extended sense; and with *that* alone, have canals and canal irrigation any proper connection.

It was not, however, until after we had examined the cantonment of Meerut, that my own faith in the practical utility of the spleen test was fully established. Hitherto, spleen disease had borne some distinct relation to the nearness of water to the surface, and in a few instances where water was *very close*, we had found the almost incredible number of about 70 per cent. of the inhabitants with enlarged spleens. Was the disease then caused by moisture alone, and not always connected with marsh fevers? Meerut seemed well calculated to verify or disprove the received opinion; for in it we had a *known* healthy locality, with water only about 12 feet from the surface.

Four separate observations were made in different parts of that large station, and out of 160 native residents examined, only three cases of spleen were found; none above average size.

The city of Delhi appears, at first sight, an instance in which the test failed; but on careful examination, I think it will only be found to furnish a striking confirmation of its general accuracy. The medical topography of the city, civil station, and military cantonment of Delhi, is an extremely complicated subject, and involves a great variety of important considerations, but I need only briefly notice in this place the following particulars:

Within the walls, and especially in the most dense and crowded quarters of the city, there were comparatively few indications of pure malarious disease. This accords with what has often been remarked in other countries, viz., That the high walls, and narrow crowded smoky streets of large cities, are frequently a safeguard against marsh miasma, although other causes of disease may abound in such situations.

In the cantonment bazar, and suburbs outside the walls, a considerable amount of spleen disease was found. But when we proceeded to examine the villages situated on the verge of the low moist "khadir" land, immediately in front of the old sapper lines (a position now abandoned in consequence of its extreme insalubrity) the test at once pointed out malaria in its *highest intensity*.

(Signed) T. E. DEMPSTER, *Surgeon, 1st Brigade*
Horse Artillery,
Member of Committee.

A STUDY OF ANACARDIUM ORIENTALE IN REFERENCE TO ITS ACTION ON THE SKIN.

(Concluded from p. 140.)

The ordinary Sanskrit name of *Anacardium* is *Bhallatakah*. But it has various other names by which it is designated. Some of them are :—

1. Aruskarah, अरुक्कारः ।
2. Sothahrit, शोथहरः ।
3. Vahninámá, वह्निनाम ।
4. Vírataruh, वीरतरुः ।
5. Vranakrit, व्रणहरः ।
6. Bhutanás'anal, भूतनाशनः ।
7. Agnimukhi, अग्निमुखी ।
8. Vírabrikshah, वीरवृक्षः ।
9. Nirdahanah, निर्दहकः ।
10. Tapanah, तपनः ।
11. Analah, अनालः ।
12. Krimighnah, कृमिघ्नः ।
13. S'ailabfjah, शैलबीजः ।
14. • Vátáril, वातारिः ।
15. Šphotavíjakah, स्फोटबीजकः ।
16. Prithagvíjah, पृथग्वीजः ।
17. Dhanurvrikshah, धनुर्वृक्षः ।
18. Víjapádapah, बीजपादपः ।
19. Vahni, वह्निः ।

Some of these names are apparently significant of what was understood to be its sensible, physiological, or medicinal properties, such as *Arushkarak*, that what causes sores or wounds ; *Sothahrit*, that which removes dropsy ; *Vranakrit*, that which causes phlegmon ; *Nirdahana*, that which causes inflammation ; *Krimighnah*, that which destroys worms ; *Vátári*, that which is enemy to rheumatism ; *Sphotavijakah*, that which sows the seeds of abscess.

The properties of the plant in general are described as pungent, bitter, astringent, hot ; it destroys worms and phlegm ; is useful in tympanites, suppression of urine, discharges from the urethra, and hæmorrhoids ; removes abdominal tumors, fever, spotted (white) leprosy, true leprosy, piles, diarrhœa, abscess.

The properties of the fruit are described as astringent, sweet, slightly hot, even cooling; it causes solution of continuity; it destroys phlegm; removes the pains of bruises and of sprains, relieves fatigue, dyspnoea, suppression of urine and stool, colic, distension of abdomen; is useful in worms, rheumatism, inflammation of abdomen, leprosy, piles, diarrhoea, tumors in abdomen, fever; improves the understanding; augments the secretion of semen; causes firmness of the teeth.

The properties of the kernel are described as follows: It is sweet, agreeable to the palate. It is particularly useful in relieving burning or heat. It causes sores or wounds. It destroys bile, causes satiety, destroys rheumatism, remedies loss of appetite, improves digestion, and is nutritious, fattening; it is aphrodisiac; it improves the hair.

The properties of the leaf-stalk are sweet, astringent, and wind-augmenting.

One cannot fail to be struck with the remarkable coincidence brought to light by the above between some of the physiological and therapeutic actions of *Anacardium*. Thus while it is said to cause inflammations and abscesses, it is also credited with the virtue of removing them; while it is said to cause wounds and sores, it is also said to be useful in sprains and bruises. Again while it is said to be astringent (not merely in taste, but in actual constipating effect, *grāhi*), it was found to be useful in constipation, and even suppression of stool.

We also see how some of its reputed therapeutic effects accord with modern provings. Thus while these teach us that it causes swelling and bleeding of the gums (looseness of the teeth is but a consequence of these), we find recorded of it that it causes firmness of the teeth. Again its action on the digestion (causing at times violent hunger, at times none at all), harmonizes with the observation of our old physicians that it causes satiety, and is also a sharpener of appetite and augmenter of the digestive fire. Again, while pathogenetically it weakens the understanding, therapeutically, according to these physicians, it strengthens and improves the understanding. Again, while by provings we learn that it creates frequent desire to urinate, but little urine passing off, we find it reputed as useful in retention of urine with or without dysuria. Its action on the male sexual organs agrees with what Sanskrit writers have said of it as being an augmenter

of the seminal secretion. And so with regard to its action in reference to hæmorrhoids, fever, fatigue, and pains (rheumatic) in the limbs, as will be seen from the following pathogenetic symptoms which we quote from *Chronic Diseases* :—

The varices of the rectum become smaller and cease to be painful, except some soreness when he begins to walk (curative effect).

During a short journey on foot, he becomes so worn out, that he can scarcely go on, and that even long after, when sitting, he is not able to recruit himself.

After a short journey on foot, which he found it extremely hard to accomplish, he felt so worn out, tired and exhausted, that he was obliged to sit down at once, and would prefer lying down ; resting the head upon something, and closing the eyes, afford him a feeling of comfort.

He accomplishes all his motions with greater energy and perseverance, his muscles contract more vigorously ; but he feels during motion, as if the fibres were put upon the stretch too much, or as if there were not a sufficient quantity of synovial fluid in the joints.

Drawing and pains in almost every part of the body.

General aching in the interior of the body.

All the tendons of the body ache so much, that he cannot walk, and is obliged to let himself fall.

Sensation, as if all the bones were bruised, early in the morning, when lying quietly in bed, with stiffness of the nape of the neck and of the small of the back ; and headache in the forehead and temples.

Repeated tearings, in paroxysms, simultaneously through the upper and lower extremities.

We need not quote the fever-symptoms as they are very copious. Now all these are remarkable coincidences, and prove the accuracy of the ancient records as well of modern provings.

We wish to draw particular attention to a remarkable virtue attributed to it, which we have not yet noticed, and which does not seem to have been noticed by any, excepting our ancient physicians. This is its curative virtue in true leprosy. It is true, the word *Kushṭha* may mean cutaneous diseases in general, but it is also true that when not otherwise mentioned, it is always intended to signify the true leprosy ; so that when *Anacardium* is spoken of as capable of destroying *kushṭha*, we may be certain that its anti-leprosy virtues are meant, and this receives corroboration from the fact that the same author who mentions it as useful in *kushṭha*, speaks of it as useful in *chitrā* (spotted or white leprosy).

Singularly enough while *Anacardium* is reputed as a medicine for leprosy, our modern kavirajs, who practise according to the principles and precepts laid down in our old medical writings, are afraid of handling the drug, even in the preparation of the medicines of which it forms an ingredient, for fear of getting the leprosy, which, I have been told by some of my kaviraj friends, has actually been the case in some instances.

Long before the cases I related in the last number came under my observation, I had heard of this traditional dread of *Anacardium* and of the reason of that dread. Guided by this fact as well as by its reputed efficacy according to our ancient physicians I have been using the drug in leprosy in homœopathic dilutions (always the 6th), and I must say that I have derived remarkable benefit from it. I do not say that I have derived benefit in all cases of the dreaded disease, or that I have effected *cure* in any single case, but I have been so satisfied of its utility in such a large number of cases, as to feel justified in recommending its use, where other remedies have failed.

As yet perhaps the use of the drug in leprosy may be said to be nothing better than empirical, but we need not hesitate to use it in cases of a disease which has hitherto defied all the resources of our art. And our hesitation will be the less, when we remember its remarkable pathogenetic action upon the cutaneous system, not only from its topical application, but also, as was seen in one of the cases we related in the last number, through secondary absorption, that is, through the constitution. Of course we do not maintain that leprosy is a cutaneous disease, but there is no doubt that it primarily and chiefly exerts its destructive influence upon the cutaneous system. The pathogenesis of *Anacardium*, while it reveals its powerful action upon the skin, shows also its profound, pervading influence upon the whole constitution, and notably upon the nervous system. And when we recommend the use of the drug in Leprosy, we of course do not wish that it should be administered at haphazard, without any reference to the other symptoms of the patient.

EDITOR'S NOTES.

CÆSALPINUS Vs. HARVEY.

Our readers are no doubt aware that when it was impossible to resist the *fact* of the circulation of the blood, "envy and detraction began their miserable work" of questioning the originality of Harvey's discovery. It appears from what we read of in the *Lancet* of the 4th current, that Italian physicians have not yet given up that "miserable work." At the unveiling of the bust of Andrea Cæsalpino, as the discoverer of the circulation of the blood, Prof. Scalzi maintained his claim to the distinction, and at the same time dwelt upon his merits as a botanist, minéralogist and master of inductive research. The *Lancet* gives the following translation of the argument advanced in behalf of Cæsalpinus by Dr. Giulio Ceradini, Professor of Physiology in the University of Genoa:—

"Galen had already asserted that the blood passes from the right heart to the left, across the lungs; he had further proved that the arteries and the veins are found anastomosed among each other in all the organs of the body. Realdo Colombo, of Cremona, was the first to recognise the function of the 'atrium,' and to deny that the blood passed also from the right to the left ventricle through the septum of the heart, according to the hypothesis of the ancients, of which hypothesis, however, Julius Cæsar Aranzio, of Bologna, was the first to demonstrate the absurdity. Finally, Andrea Cæsalpino, of Arezzo, in 1569, discovered the physiological and continual passage of the blood from the arteries to the veins across the capillary anastomosis in all parts of the body, and defined by 'circulation' the perpetual motion of the blood from the veins to the right heart, from this to the lung, from the lung to the left heart, and from the left heart to the arteries; producing, in the year 1593, the experimental proof of the circulation in the fact that the veins when tied in any part of the body swell between their original capillaries and the ligature, and, when cut, let out first the black venous blood, then the red arterial blood. Cæsalpino further recognised that the blood is contained in the arteries at a higher pressure than in the veins, and that its passage from the former to the latter is opposed, by the capillaries with greater or smaller effect, according to the degree of their dilatation. And all these things he taught from his chair, first at Pisa, and subsequently at Rome, where he died in 1603. Harvey could, in 1628, adduce nothing more than a fresh proof of the circulation in the venous valves, discovered by Jerome Fabricio, of Aqua-

pendente, as early as 1574, by demonstrating that the said valves must oppose the centrifugal movement of the blood; but Harvey's greatest merit really consists in having sustained and won a battle against ignorance and prejudice by divulging the discovery of Cesalpino.

"To recapitulate: The discovery of the circulation of the blood does not belong to the school of Padua, although without doubt Fabricio, by discovering the venous valves, and Harvey by revealing their true function, have contributed to fortify it; as little does it belong to the school of Bologna; and as it received no contribution either from Vesalius, or Vidius, or Fallopius, or Colombo, who, though for but a short time, had held the chair before Cesalpino, it would be unjust to ascribe it to the Pisan school. After Galen this discovery was not made by degrees, and by the work of many, as is generally believed, but *ex abrupto*, by the exclusive labour and unassisted person of the philosopher of Alezzo. We accordingly express the wish that the city of Pisa, where for the first time the circulation of the blood was demonstrated, should take the initiative in holding a solemn celebration in honor of the memory of Cesalpino on the same day on which London celebrates the memory of Harvey. We express the further wish that over the entrance of that ancient seat of learning there be placed *ad perpetuam rei memoriam*, an inscription which, in a language universally understood, and in a simple narrative style, should convey something like the following:—

"Andreas Cæsalpinus Aretinus Pisana in Academia Medicinæ Lector, Galeni erroribus de jecoris venarumque officio emendatis, sanguinis detexit per universum corpus circulationem quam etiam vinculis adhibitis vivisectionibus patefecit, suis vero in peripateticis ac medicis quæstionibus anno MDLXIX. vel MDXCIII. editis, ipsissima circulationis voce usus, plano descripsit. Male sibi consuluit Harveius ille Anglus, hanc qui sibi maximi veritatem momenti ausus anno MDCXXVIII. est decernere."

Translation.—"Andrew Cesalpino of Arezzo, lecturer on Medicine in the University of Pisa, after the correction of Galen's errors as to the function of the liver and the veins, discovered the circulation of the blood through the whole body, which circulation he made manifest by vivisections after ligatures had been applied to the veins, and which in his 'Quistioni peripatetiche' and 'Quistioni Mediche,' published in 1569 or 1593, using the word 'circulation' itself, he fully described. Ill-advised was the English Harvey who, in 1628, dared to arrogate to himself the discovery of this mighty truth."

THE PHYSIOLOGICAL ACTION OF HYOSCYAMINE.

The following conclusions have been arrived at by Dr. Lawson from his recent elaborate experiments with Hyoscyamine :—

1. The smallest active doses of hyoscyamine, when administered to animals, cause numerical depression of the pulse, and increased arterial tension, reduce the temperature, dilate the pupil, and have little effect on the respirations.

2. Small doses cause reduction of the pulse, with increase of arterial pressure, followed by quickening, which after a greater or less persistence, somewhat suddenly subsides, and sinks towards the normal point. During the action of the medicine there is restlessness, followed by motor paralysis, diminution of respiration, and reduction of temperature, about 4°. The drug in all cases produces dilatation of the pupil, and dryness of the mouth and throat.

3. Large doses elevate the pulse without previous depression, and this quickening is maintained for six or eight hours. Great fall of temperature, diminution of the respirations, loss of motor power, delirious excitement, and sometimes prolonged but interrupted sleep succeed, and are in their turn followed by sudden reduction of the pulse towards the initial point, and sometimes below it. This fall precedes complete recovery from the operation of the drug.

4. Lethal doses cause death either by syncope during extreme vascular excitement, or by coma following upon non-elimination of the drug by the urine, and imperfect aeration of the blood through impairment of respiration.

5. The drug generally produces increased urinary and diminished alvine secretion.

6. To rabbits, pigeons, and others of the lower animals, hyoscyamine is almost, if not altogether, as active a poison as to man ; but in birds no dilatation of the pupil is produced by it, and no dryness of the mouth and throat.

7. Long-continued administration of the drug causes loss of weight, quickening of the pulsation, with increase of arterial pressure, quickening also of respiration and *increase of temperature*. Subsequently there is restoration of weight, but persistence of heightened pulsation, respiration, and temperature. Individual doses administered to an animal constitutionally affected with hyoscyamine cause not reduction, but elevation of animal heat.

8. The intra-thoracic changes, and the decline of temperature, are physiologically produced by stimulation of the sympathetic system, and depression of the cardiac and pulmonary distribution of the pneumogastrics. The elevation of temperature caused by individual doses administered to animals, persistently under the influence of the drug, is probably due to a tolerance of the substance by the pneumogastrics, while the sympathetic still remains affected by it.

9. The pupil is dilated by hyoscyamine through simultaneous stimulation of the sympathetic and depression of the third pair as distributed to the iris.

10. Local application causes dilatation of the pupil, commencing in from three to four minutes, increasing for fifteen minutes, persistent for about three and a half hours, gradually passing off and returning to the normal state in three days. After the internal use of moderate doses, the pupil begins to dilate in from two to three minutes, and reaches the widest diameter in twenty minutes. The maximum dilatation persists more than twenty-four hours, and the pupil does not return to its normal size for six days.

11. In man the cerebral symptoms are more marked than in the lower animals, and the motor, cardiac, respiratory, and thermal symptoms less so. With small doses the pulse is first slightly reduced, and at the commencement of the cerebral and motor excitement is elevated about twenty beats above the initial index. The pupil is dilated, and the vision becomes imperfect. During the hypnotic stage the pulse falls towards the starting point. During the whole period the temperature falls 0.7° , and after the cessation of interrupted sleep some cerebral confusion remains, as is manifested by occasional incoherence and a liability to trifling delusions.

12. Larger doses cause direct elevation of the pulse and slight reduction of oral temperature. Dilatation of the pupil is followed by paralysis of ocular accommodation. Motor power is impaired, and interrupted sleep alternates with, and is followed by, delirium. Delusions and hallucinations, associated with rapid and imperfect ideation, are succeeded in six or seven hours by a renewed tendency to sleep, which is disturbed by dreams and by intervals of wakefulness, with hallucinations.

ON THE CONTRACTION AND INNERVATION OF THE SPLEEN.

The following are the results of DR. JOHANN BULGAK's researches on the subject carried on in dogs under the influence of morphia or chloroform as summarised in the *Dublin Journal of Medical Science* for Oct. :—

Of the nerves which surround the splenic vessels, some are centrifugal, others centripetal. Section of the former causes a localised swelling and cyanosis of the spleen. Section of the centripetal nerves is without effect. Irritation (by weak induction currents) of the central end of a centripetal nerve produces general contraction of the spleen, and signs of pain. Irritation of the central end of a centrifugal nerve is without result. Irritation of the peripheral end of a centripetal nerve is without effect. Irritation of the peripheral end of a centrifugal nerve causes contraction of that part of the spleen supplied by the nerve operated upon. When the electrodes are applied directly to the surface of the spleen, a contraction, limited to the part between the electrodes, is noticed. When the spleen contracts, the surface becomes pale and granular, and the organ becomes smaller, firmer, and of a slaty-gray colour. When the irritation ceases, the surface

becomes again red and smooth, and the condition is gradually restored. A series of observations were made on the blood leaving the spleen, in order to see how the number of white corpuscles were influenced by the different condition of the organ. It was found that the number was at its maximum when the spleen was in its usual uncontracted condition; that it diminished during contraction and fell to a minimum when the organ was swollen. If however, a previously swollen spleen was made to contract, then the number of white corpuscles in the blood of the vein increased considerably.

The contraction of the spleen is influenced by several circumstances—

1. Curara, or a long-enduring or profound narcosis, enfeebles it. The spleen becomes flaccid, blue, and at last loses altogether the power of contraction.
2. Injections of quinine into the veins produces a contraction of the spleen, and an increase of white corpuscles in the blood of the splenic vein.
3. *Secale cornutum* is without effect even in doses sufficient to produce violent contractions of the blood-vessels, and of the intestine and uterus.
4. Suffocation causes general contraction of the spleen, and of the vessels throughout the body.
5. Irritation of the central end of the cervical vago-sympathetic trunk, or of the superior laryngeal nerve, causes contraction of the spleen, but this is due to the disturbance of respiration caused by the experiment.
6. Irritation of the semi-lunar ganglion causes strong and generalised contraction of the spleen.
7. Atmospheric air has no effect on the spleen if cooling and evaporation be avoided.

By irritation and section of the spinal cord at different heights, it was found that the reflex and motor centre of the spleen lies between the first and fourth cervical vertebrae—that below the fourth vertebra only the conducting centrifugal and centripetal nerves run. These observations refer only to the nerves of the muscular tissue of the spleen itself (capsule and trabeculae), not to those of the splenic vessels. In how far these are distinct in their origin and course from those of the spleen tissue, is not quite clear. All the splenic fibres, centrifugal and centripetal, run in the greater splanchnic nerve on the left side. Irritation of the peripheral end of this causes a strong and long-enduring contraction. Irritation of the dorsal spinal roots on the left side, from the third to the tenth, causes distinct, although feeble, contractions. Irritation of the roots above the third, or below the tenth, is without effect.

Gleanings from Contemporary Literature.**ADDRESS BEFORE THE WORLD'S HOMŒOPATHIC
CONVENTION OF 1876.***

By CARROLL DUNHAM, M. D., of IRVINGTON, N. Y.,
President of the Convention.

LADIES AND GENTLEMEN : The proposition to hold a World's Homœopathic Convention was first made by the American Institute of Homœopathy, in a circular letter issued by its Committee of Foreign Correspondence in 1867. The plan of the present convention was conceived soon after the project of a formal celebration of our National Centennial took definite shape.

Many years must elapse, it is true, before the centennial of Homœopathy, which, in America, has but just celebrated her fiftieth anniversary. Yet certain analogies between the early history of Homœopathy and the event which our countrymen celebrate in Philadelphia this summer, justify the time and place of our assemblage.

The innovation upon accepted theories of society and government involved in the Declaration of Independence by our forefathers was not more radical than that which was involved in the reform introduced in medical science by Hahnemann.

Notions of prerogative by virtue of birth or of caste ; notions of governors as a race distinct from the governed ; vested rights transmitted in corporations from mediæval times ; in these things was grounded the opposition to the political reform of our fathers.

Things identical or analogous hindered, and still hinder, the advancement of Homœopathy, as the historical and statistical reports presented to this convention abundantly show.

Reforms are not favored nor furthered by governments and venerable corporations. These institutions are, from the nature of things, conservative and repressive.

Reforms of a practical nature are received first by the people ; adopted and cherished by the people ; and, if governmental acceptance be necessary, forced on the government by the people.

The history of Homœopathy shows that in countries in which the government is absolute, in which education and the exercise of the liberal professions and the arts connected therewith are under the control of self-perpetuating boards or corporations, there our colleagues have found it difficult to obtain freedom to practise, and well nigh impossible to gain liberty to teach.

In proportion as the government, whether of the realm or of corporations, being in a degree representative, stands nearer to the people to whom the reform is a matter of vital interest, do our colleagues enjoy comparative freedom to practise and to teach.

* Delivered at Philadelphia, Monday, June 26th, 1876.

In our own land, where the liberty of the individual is limited only by the liberty of his neighbours, where order is maintained by a government "of the people, for the people, by the people," we practise and teach without hindrance; and the advancement of Homœopathy has been rapid and solid beyond precedent, because the people have so willed it.

The coincidence, then, of this convention and the centennial of our nation has a significance. It is full of instruction and warning to us, if we would retain what we possess.

It was not to be expected that many of our foreign colleagues should make the long journey necessary to be present with us, on this occasion. Some have come, however; and we welcome most heartily our distinguished confreres, already known to us by their works and their fame, who represent the homœopathists of Europe and South America.

But although comparatively few could be with us in person, our colleagues in every land have responded heartily to our invitation by reports and scientific papers, which, together with those contributed by our fellow citizens, will furnish the topics of our discussions.

Moreover, by official and personal letters, they have manifested their good-will and sympathy in the inception and work of the convention. Such letters as are addressed to the convention are herewith submitted; and since some of them contain suggestions for action on the part of the convention, I request that they be referred to a Committee on Correspondence, with instruction to report with recommendation. Among these communications is one from the venerable widow of the illustrious founder of our school, who now, at an advanced age, impoverished by the calamities of war, extends her greetings to the homœopathists of the world here represented. In token of her sympathy, she sends to the convention, with an ulterior destination in the discretion of the President, this bronzed bust of Hahnemann, cast from the marble bust by David D'Anger, and which she affirms to be a perfect likeness of that illustrious man.

Our colleague, Dr. Rubini, of Naples, in a letter to the convention, calls attention to his peculiar views of the treatment of epidemic cholera, which he supports by remarkably favorable statistics. As a mark of respect for the convention, he has sent to the President autograph letters of Hahnemann.

Our colleagues of the United States of Colombia, in South America, inspired by the energy and prosperity of the American Institute of Homœopathy, have not only revived their National Institute, which, in consequence of political disturbances, had slept for several years, but they have organized in Bogota a homœopathic school, which they have done us the honour to designate as a "branch of the American Institute of Homœopathy." These institutions request us to enter into intimate scientific relations with them in matters connected with the cultivation of our *Materia Medica*; and they make suggestions to this convention, which appear in the letters herewith submitted.

Several other societies and individuals send communications which, if you please, will be reported in detail by the committee.

The historical and statistical reports presented to the convention, and which though of exceeding interest are altogether too long to be read during our sessions, comprise the history and statistics of our school in every country of Europe ; in India ; in South America, where, in Brazil, a national institute and college were established one year before our own ; in North and South Africa ; in Australia, and in New Zealand. We may say, with almost absolute accuracy, that in none of these countries save Germany was there fifty-five years ago a single homœopathic physician. Now, it is safe to say, that Germany, France, England, and Italy have each about 300, Spain and her colonies between 500 and 600, Brazil about 200, Russia about 150 ; and in each of these countries, we are told, the demand for homœopathic practitioners is so great that, if instruction were free to our colleagues, and no hinderances were placed in the way of students of homœopathic medicine, the increase in our numbers would be very rapid. Dispensaries and hospitals exist and are increasing in numbers and patronage. Measures are being set on foot for the education of young physicians in the principles and practice of Homœopathy, and the confidence of the public is won by our practical success.

In our own country, the reports of the several States give an aggregate number of above 5000 homœopathic physicians. We have many dispensaries and hospitals supported by private charity ; seven colleges, exclusively homœopathic, enjoying equal privileges with any other medical colleges in the country ; and two State universities and several State hospitals, in which, despite the opposition of our brothers of the old school, the people who support these institutions have decreed us places in the faculty and on the staff.

Most schools of medicine have perished with their founders, or a little before them. Thirty-three years have passed since the founder of our school entered into his well-earned rest. Our growth in numbers and influence has been steady, and never so rapid as within the last decade.

The time at my disposal would not permit an analysis of the system which presents so remarkable a history. I crave permission, however, to devote a few moments to some of the relations of Homœopathy to the medical science of Hahnemann's day and to the medical sciences of our own day.

Homœopathy, in its complete form, was introduced to the public in 1810, by the publication of the *Organon of the Rational Art of Healing*, a work which, it seems to me, has hardly been fully understood or appreciated even by the majority of Hahnemann's enthusiastic admirers—a work which, far from consigning to the shelves as a classic, venerated but seldom read and not looked on as authority in practical matters—I should place, for frequent perusal and as a trusted guide, in the hands, not perhaps of the student, but of the educated earnest practitioner.

Condensed in style to the exclusion of every superfluous word, this work is not a system of medical science, but, as its title signifies, a treatise on the practical art of healing, with only so much of theoretical discussion as seemed necessary to make the meaning clear, with only so much allusion

to other departments of medical science as seemed necessary to show their insufficiency for the needs of the practical physician, or to show the errors of philosophy and method through which they failed to accomplish the true end and object of all medical sciences, a speedy, safe, and pleasant mode of cure.

Should we heed some self-appointed champions of Hahnemann, we might suppose that this illustrious physician denounced all medical science save that which he especially taught, and discouraged its acquisition by his followers.

Were this indeed so, the reproach of our adversaries might have some foundation: that Homœopathy is a system which a layman might practise as well as a doctor. Again, if we listen to these brethren who seem to arrogate a special knowledge of Hahnemann and of Homœopathy, we might suppose that Hahnemann proclaimed his *Organon* and later works to be the alpha and omega of medical science, rendering all other medical knowledge superfluous. Very far is either of these propositions from the truth. Hahnemann as a physician was distinguished by profound learning and the broadest medical culture of his times. His writings are full of this learning. His extensive reading in every language in which medical men had written, enabled him to make those citations which, in the *Organon*, so irrefutably prove his positions, and in the *Materia Medica* enrich his pathogeneses. The spirit of the medical science of his day permeates his *Organon*. It is not too much to say, that without this great fund of medical knowledge he could not have given us the magnificent argument of the *Organon*, nor the practical instrument of the *Materia Medica*. Now, seeing from the commanding eminence which he occupied, as a master in medicine, how barren of practical good was the medical science of the day, he was not so illogical and unjust as to denounce that which gave him this broad vision and the benevolent hope that came with it. He did perceive that all the efforts of scientific men had failed to realise what is, after all, the great practical end of all effort in this direction, viz., a true science and successful art of therapeutics. And he perceived and clearly showed that this failure resulted from an erroneous method of seeking for facts and reasoning from them; in a word, from misdirected observation and a mistaken philosophy. He proceeded accordingly to use the facts of which his acquaintance with medical science had possessed him, to demonstrate the new science of therapeutics which he unfolded, and to make new observations in accordance with what he deemed a correct philosophy.

But he never declared the ladder superfluous by which he had climbed, nor denounced the bridge which had carried him safely over his perplexities! The *Organon* is strictly what its name signifies—an instrument of the rational art of healing—an exposition of therapeutics or that branch of medical science which concerns itself with healing disease by means of drugs, and its author assumed that those who would use it would be men

already versed in medical science. In four of the terse and weighty sentences which characterize this book,* Hahnemann takes it for granted, "as a matter of course," that "every sensible physician," before applying the art of healing which he is unfolding, will first make certain investigations and take certain steps, which investigations and steps really comprehend what we now comprise under the heads of etiology, semiology, diagnosis and hygienic management. I need not say to this learned body that he who can investigate these points satisfactorily, and take these measures judiciously, must be well versed in medical science. With this single assumption that his follower would, as he needs must, be familiar with general medical science, Hahnemann dismissed all considerations of anything save *therapeutics*; and he proceeded to show the errors of this department of medicine as it then existed. He showed that the indications for treatment were based on hypothetical assumption of the essential nature of the disease—a matter which is of necessity unknown, it being but a modification of the eternal mystery, Life. He showed that the uses of drugs were deduced from hypotheses concerning their intimate action; and this not on a constant but a variable object, viz., the diseased organism. It was *this unstable foundation of hypothesis in therapeutics* which Hahnemann denounced, and for which he was the first to substitute the "positive philosophy" based on pure experiment and exact observation, which is now universally accepted in the physical sciences, the therapeutics of the old school alone excepted.

In the exposition of his new philosophy Hahnemann provided for an investigation of the patient of which hypothesis should form no part of the foundation, by affirming that, for the practical needs of the healer of the sick, the aggregate of the symptoms constitutes the "principal and only condition to be recognised and removed by his art." The semiologist may speculate, if he will, on the ulterior cause or the essential nature of some or all of the symptoms, but for the *practical prescriber* the symptoms themselves in their totality furnish the only precise and safe indication for treatment by drugs. He was the first to establish pharmacodynamics as an independent physical science, based on observation of the effects of drugs on a constant object, the healthy human organism. I use the term pharmacodynamics instead of *materia medica*, because this science—the subject of which is the relation of the healthy living organism to whatever substance is capable of modifying it, the extension of which is limited only by the variety of substances capable of modifying the organism,—investigates the properties of all substances that have the power to change function or tissue, independently of any use which has been or may be made of them in the medical art. It properly, therefore, embraces, to use Professor Allen's happy phrase, "every noxious substance;" the word "noxious" meaning—not "*nasty*," as some appear to think, but—"capable of harming or injuring—that is, of modifying—healthy function or tissue."

* Paragraph 5 and the note.

He demonstrated the law of relation between the symptoms of the sick and those produced by drugs on the healthy, by virtue of which law the right remedy might be selected for each case, provided the science of pharmacodynamics have given us a knowledge of the required drug. He proved that the power of drugs to cure disease is not in direct proportion to the quantity of the drug employed, and further that a certain mode of subdivision of the particles of the drug greatly enhances the power of the preparation to modify morbid functions and tissues.

These are the essential features of the reform in medicine, which in 1810 was represented by Hahnemann. In 1876, this representative body, speaking for thousands of practitioners, and millions of grateful adherents in every quarter of the globe, attest its soundness and vitality.

During this period, our brethren of the old school have been most diligent in the pursuit of medical science, and we may profitably ask, what relations the departments to which they have especially devoted themselves now hold to the science which alone distinguishes us from them—Therapeutics? The question will be discussed, in various relations, during the sessions of the convention. I crave permission to say, for myself, a few words on one of them. Pathology, which hardly existed as a positive science in Hahnemann's day, has been diligently elaborated by ingenious and exact experimentation, until to-day it holds no mean rank among the positive sciences of observation. Must we denounce it as Hahnemann did the pathology of his day? Can we not use it? It has been held to be the criterion of a true natural science, that new discoveries, new sciences, extend and enrich it; unite with it in amplifying the horizon of human knowledge and power; but never contradict or supersede it, nor are even indifferent to it. This is an expression of the unity of true science. If, then, our science of therapeutics be not capable of adapting itself to, of dovetailing with, or making subservient to its uses any exact related physical science, is not that fact the condemnation of our therapeutics? Pathology is the science of functions as modified by disease, and pathological anatomy the science of tissues as modified by disease. Using the word symptom in its largest sense, as a modification of function, or tissue, or both, pathology is, therefore, the science of symptoms. It concerns itself with the relations of symptoms to each other as individuals or classes, with the rank of different symptoms in order of time and causation, with their origin and evolution, and their relation to tissues, organs, or apparatus. To give a few examples, it deals with the relations of the symptoms of the heart and kidney respectively; of those of glycosuria and functional liver disturbance, or cerebral disorder, or gastric derangement, or dietetic error. This science of symptoms enables us to detect the dependence of symptoms upon material removable causes, such as the symptoms of syncope on a wounded blood-vessel, of intoxication on poisonous ingesta, of various disorders on injudicious modes of life, and leads us to those measures which Hahnemann supposes every "sensible physician" will resort to before he has recourse to therapeutics proper. Finally, it enables us to detect

"morbid chronic miasma," as Hahnemann calls them, as the hidden "causes of chronic disease." These are a few examples from a host that might be cited.

Now, Pathology, enabling us thus to trace the relations of symptoms to each other, enables us, in the first place, to follow Hahnemann's advice more extensively than was practicable in his own day, and "discover the primary causes of a chronic disease," or "discern the exciting or maintaining cause of the disease and take measures for its removal," as Hahnemann directed us; and, by the aid of Pathology, many cases are now relegated to the domain of Hygiene, which were formerly regarded as proper subjects for drug-treatment.

In the second place, Pathology, concerning itself with the origin and relations of modifications of functions, that is, with symptoms, enables us to procure from observation of the patient a much more complete picture of the totality of the symptoms than would be possible without its aid; just as a systematic and intelligent survey of a museum gives us a more complete knowledge of its contents than any routine examination of it would do. Where, for example, the routine observer, getting the symptoms resulting from a diseased kidney might, from the absence of striking symptoms, fail to interrogate those of the heart, or *vice versa*, and thus fail to get the complete totality of the symptoms, the pathologist is led, by his knowledge of the close relations of these organs in disease, to investigate more closely, with results which greatly assist his selection of the remedy. Or the routine observer *might* fail to get, in a pleurisy, more symptoms than those of a pleurodynia; but the pathologist who knows the semblances and differences in the symptomatology of these affections, will so direct his inquiries as to bring out a totality of symptoms which should not only leave no doubt as to diagnosis, but should also point more clearly to the remedy than the others. So it appears that modern Pathology, which has been assumed to stand in direct opposition to the doctrine that for the prescriber the totality of the symptoms represents the disease he is to remove, is really the prescriber's most efficient and indispensable instrument and aid in getting at that very totality of symptoms which he is to remove by a corresponding drug. Used in this way, as an aid in the methodical investigation of the symptoms, both of disease and of remedies, Pathology, imperfect as it is, is of inestimable value to the homœopathist. And, taking this view of the subject, I do not hesitate to say that the strict Hahnemannian, if, with complete medical culture, he investigate and treat his case in the spirit of Hahnemann's doctrine, is the best and profoundest pathologist.

But if, diverting Pathology from this, its legitimate function, the homœopathist construct by its aid a theory of the essential nature of the disease, and a theory of the essential nature of drug-effects, as that the one or the other depend on a plus or minus of some blood constituent, or on such or such a cell change, or on such or such a structural lesion, and if he draws his indications for treatment from such a theory, he introduces into his

therapeutics the same element of *hypothesis* against which Hahnemann protested, and in so doing, he diverges from Homœopathy towards the blind uncertainty of the older therapeutics. Moreover, however well grounded his hypothesis may be—when he prescribes on the basis of a pathological induction, or when he elects to regard one pathological modification of function or tissue as comprising the sum and substance of each and every case in which it is recognised, he necessarily prescribes for a *class*, and is unable to observe that strict individualization which is essential to a sound homœopathic prescription. This must always be the case. It is especially true in the present imperfect state of Pathology, which has no way of accounting for the firm subjective symptoms that are so valuable to the individualiser.

To say more on this point would be to trespass on your patience and on the ground of to-morrow's discussion.

When Hahnemann promulgated his reform it was received with universal derision by the profession. What is the present attitude of our opponents towards its fundamental propositions?

First. That, for the practical physician, the aggregate of the symptoms constitutes the disease. Aitken says: "It is now a received pathological doctrine that disease does not consist in any single state or special existence, but is the *natural expression of a combination of phenomena arising out of impaired function or altered tissue*" (1.6). This is equivalent to Hahnemann's proposition.

Second. That the only valid source of positive knowledge of the action of drugs is to be found in observations on the healthy organism is now widely conceded, and the physiological laboratories of the old school issue every year elaborate drug provings which, though defective in points that we deem essential, are, I think, of great value to us.

Third. Touching the law of cure, *Similia similibus curantur*, to show the absurdity of which so much logic and wit have been expended by our opponents, the latest utterance of the old school is the following by Dr. L. Brunton, the well known English physiologist: "The opposite action of large and small doses seems to be the basis of truth on which the doctrine of homœopathy has been founded. The irrational practice of giving infinitesimal doses has, of course, nothing to do with the principle of homœopathy, *Similia similibus curantur*. The only requisite is that mentioned by Hippocrates when he recommended *Mandrake* in mania, viz., that the dose be smaller than would be sufficient to produce in a healthy man symptoms similar to those of the disease. . . . But it is not proved that all drugs have an opposite action in large or small doses, and homœopathy, therefore, cannot be accepted as a universal rule of practice." A great concession truly!

It appears that our opponents have come pretty nearly to our ground, except on the fourth point, that of the infinitesimal dose. Touching this point their denunciation of us has lost none of its bitterness. They claim to have demonstrated again and again that there is nothing in our poten-

timed preparations. The reasoning of Thomson touching the size of molecules furnishes them with a welcome argument against the possibility of any drug potency existing in even our medium attenuations. And these arguments have strongly influenced many of our own school whose personal experience and observation had not compelled opposite convictions. But let me say that proofs of a *negative* in any matter which can be determined only by experiment, are very fallacious, and a dangerous dependence. I do not despair of seeing before many years, from some old-school authority or some non-medical investigator, a demonstration of the medicinal power of homœopathic potencies; and I warn such of my colleagues as have been influenced by the arguments of our opponents, against the chagrin they will feel when they shall be out-flanked on this point; when to unbelieving homœopathists shall be presented, by experimenting allopaths, a demonstration of the drug-power inherent in homœopathic attenuations. An incident touching on the history of our *Materia Medica* is very suggestive in this connection. When the Nestor of homœopathy,* whose jubilee we celebrated here last March, and whom God spares to gladden our hearts to-day by his presence, undertook those studies of serpent venom which have brought such honor to his name, and such benefit to suffering humanity, he added to the effects observed from swallowing infinitesimal quantities of the venom, the effects produced by large quantities introduced into the system by a snake-bite, regarding the latter as complementary to the former, and both as portions of a graduated scale of homologous effects. But many of our own school could not admit an analogy between the effects of small internal doses and of the bite. The chemists proved that saliva, or gastric juice, or alcohol render venom innocuous. Finally, it was "proved to demonstration," in this city and in India, that serpent venom introduced into the stomach could *not* act. This demonstration of a negative was accepted by many of our own school, by whom the serpent venoms were accordingly discarded as inert. Soon, however, Hermann, the physiologist, giving *Curare* to a rabbit whose renal arteries were tied, found death occur, and from as small a dose introduced into the stomach as would have proved fatal if introduced beneath the skin. This suggested the idea that the apparent inertness of venom in the stomach results from its slow absorption and rapid elimination which prevent its reaching the centres on which it acts. And lately Fayrer and Brunton, studying serpent venom under the auspices of the British Government, have satisfied themselves, and unequivocally affirm, that venom introduced into the stomach affects the system more slowly and gently, and therefore with a greater variety of symptoms, but in essentially the same way, and with a tendency to the same results as when introduced into the blood by a bite. Thus is the negative demonstration overthrown, and the correctness of our veteran colleague's induction most happily established. But in what a position do these facts leave those of our school who, disregarding the

provings of trustworthy members of their own school, disregarding and not willing to verify the *a posteriori* evidence of cures in great numbers, cast out from their *Materia Medica* *Lachesis*, *Crotalus*, and *Naja*, on the negative demonstration of an old-school physiologist! In the same position many will stand, I think, when ingenious experiment on molecular energy shall lead a Tyndal or a Crookes to a demonstration of the power of potentised medicaments.

Such is the position of advanced thinkers of the dominant school touching the cardinal points of the doctrine held by those who are known as homœopaths, a name which, inasmuch as it still expresses radical difference in scientific belief and a vital difference to the patient in the modes of practice which it involves, I, for one, am not disposed to relinquish. When there shall cease to be *fundamental* differences in *faith* and *practice* among medical men, there will be no further occasion for distinctive appellations.

Ladies and gentlemen! From the tiny spark kindled in Hahnemann's little house at Leipzig, homœopathy has become this great beacon, illuminating every quarter of the earth; from the solitary promulgator of the reform in Germany, her advocates have become the host here represented, and this by virtue of the fact that every physician who investigated and was convinced exercised his inborn right to liberty of judgment. From her tiny beginnings, in 1810, homœopathy has come to have to-day her thousands of practitioners and her millions of adherents, not so much by virtue of the special cogency of the reasoning by which her claims were supported, as through the visible and perceptible effects of her practice upon the sick. This practical argument has a just weight with the people, and in proportion to liberty of thought and action among people and practitioners has been the rapidity of her growth. In this propaganda each practitioner was most efficient in the diligent, faithful, solitary performance of his round of duty. In caring for his business and his own interests, he was most effectually spreading a knowledge of the doctrines he professed.

The present epoch calls us to other labours. The duty of service in public hospitals and charities, from which we have hitherto been exempt, is now falling on us by reason of our numbers. The responsibility of medical instruction has always rested on physicians as experts. In other countries where the restrictions of governmental boards and the privileges of corporations so sadly hinder freedom of action on the part of our colleagues, and of opinion on the part of students who would investigate our method and join us if they had opportunity and dared, it would seem incumbent on our confrères to avail themselves of some way, however provisional and incomplete, to diffuse among the profession and instil into the young a knowledge of the truth we cherish. And it is a satisfaction to believe that the fact of this convention has proved, if not an incentive, yet a great encouragement to such effort in more than one European country. In our own land, where we have long had schools of our

own established by our colleagues and their clients, the people are beginning to call on us for instructors in the universities which they have founded.

We must be prepared to meet these calls and to fulfil all these duties. They require certain qualities in addition to those which suffice for the isolated practitioner : capacity to work with others ; patience to bear and forbear ; perseverance to labour persistently for what we believe to be right, and submit patiently until the right can be realized ; magnanimity to prefer the good of the whole to the triumph of our own ; in a word we need to substitute *esprit de corps* for *esprit de soi-même*. Surely Milton was right when he said : " A little generous prudence, a little forbearance of one another, and some grain of charity might win all our diligences to join and unite in one general and brotherly search after Truth."

Nor should this cultivation of a faculty for associated labour be confined by the boundaries of any single nation. The "world is our field ;" and this convention shows that we may profitably and effectively unite our efforts with those of our most distant colleagues for the development and advancement of the science of Therapeutics.

The remaining sessions of this convention will be devoted to scientific discussion, free, I sincerely hope, from uncharitable reflections on those of our profession who do not believe as we do.

The subjects of discussion include some on which we differ widely, and some of us feel deeply. May I bespeak the largest tolerance for differences of opinion, and the completest freedom of expression. Thus only shall any of us get at Truth. For I firmly hold, with Milton, that —

" Though all the winds of doctrine were let loose to play upon the earth, so Truth be in the field, we do injuriously to misdoubt her strength. Let her and Falsehood grapple ; who ever knew Truth put to the worst in a free and open encounter ?"—*The British Journal of Homæopathy*, Oct. 1876.

We have to tender our best thanks to the Editors of the following Periodicals for regularly exchanging with us :—

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The British Journal of Homœopathy (H. Turner & Co., London).

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The American Homœopathic Observer.

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The American Homœopathist.

The New England Medical Gazette.

El Criterio Medico (Madrid).

La Reforma Medica (Madrid).

La Homœopatía (Bogota).

(We have not received these Journals for some years past.)

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The Hindoo Patriot.

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MEDICINE

VOL. VIII.] **Dec. 1876 to Feb. 1877.** [NOS. 6 to 8.

THE ETIOLOGY OR CAUSATION OF MALARIOUS
FEVERS, WITH ESPECIAL REFERENCE
TO THE FEVERS OF BENGAL.

*REPORT of the COMMITTEE appointed to inquire into the causes of
the Epidemic, its course, and the best means of Checking its
further progress.*

From F. ANDERSON, Esq., M. D., Deputy-Inspector General of Hospitals,
President of the Commission, to F. R. COCKERELL, Esq., Officiating
Secretary to the Government of Bengal,—(dated the 31st March
1864.)

SIR,—WITH reference to your letter No. 97, dated the 8th
January last, I have now the honor to transmit, for submission
to His Honor the Lieutenant-Governor, the Proceedings of a
Commission deputed by him for the purpose of instituting an
enquiry into the probable causes of the fevers that have caused
so terrible a mortality in the Districts of Hooghly, Burdwan,
Nuddea, Jessore, and the 24-Pergunnahs.

REPORT.

IN compliance with the instructions contained in a communication, No. 97 of the 8th January last from the Officiating Secretary to the Government of Bengal, to the Deputy Inspector-General of Hospitals, Barrackpore Circle, a preliminary meeting of the Members appointed by Government to form a Commission to proceed to the Districts affected by epidemic fever and enquire into the nature and probable causes of the epidemic was held at Dr. F. Anderson's House at Barrackpore on the 14th January, to take into consideration the plan to be adopted for the purpose of carrying out the orders of Government; and it was settled that the Commission should personally, and as far as possible in concert, visit those villages which had suffered most severely in the fever-stricken Districts.

2. On studying the subjects of enquiry propounded in the Government letter it appeared advisable that an application should be made for the appointment, as an additional Member of the Commission, of a qualified Engineer. The application was accordingly made, and met with the approval of His Honor the Lieutenant-Governor. Mr. Leonard was added to the list of Members, but the Commission had nearly concluded their tour of investigation before the orders of Government on the subject were known, and Mr. Leonard's service have not, therefore, been made practically available.

3. On the 19th January the Commission visited the large Village of Pundooah on the East Indian Railway, and from that date until the end of February they were engaged in visiting the villages, which were reported as having suffered the most severely during the past few years, in the Districts of Burdwan, Hooghly, Nuddea, and the 24-Pergunnahs. The following are the names of some of the larger and more interesting of these villages:—

In Burdwan.—Culna.

In Hooghly.—Keuta, Shahagunge, Seebpore, Trebeni, Pundooah, Dwarbāshini, Bolaghur, and Goopteepara.

In Nuddea.—Kanchrapara, Chogda, Kishnaghur, and Oollah.

In 24-Pergunnahs.—Baraset, Rajahatha, Majergram, Neelgunge, Bara Jagoollee, and Halleshahur.

4. We propose in this Report to adhere to the line of enquiry indicated in the government letter, and to reply categorically to the several questions contained therein, drawing such inferences and conclusions as may strike us as important and tending to practical results.

5. The general remarks which we have to offer on the subjects noted in these questions may be conveniently embraced in one reply.

1.—THE GENERAL CONDITION
OF THE SURFACE.

Enquiry should be made as to—

(1.) The general levels of the District or locality in which epidemic is, or has recently been, prevalent, with reference to the levels of the rivers in the dry as well as in the rainy season.

(2.) The surface of the District and the nature of the soil, whether it is an unbroken dry plain in the rains or more or less under water either from the overflowing of tanks and rivers or from want of fall sufficient to carry off the rain water.

(3.) The proportion of the surface, which is never covered with water, as compared with the space which is occasionally submerged.

(4.) Whether the surface water is absorbed by the soil or subsides, by means of drainage, natural or artificial, into tanks, khals, creeks, or low marshy ground, or is allowed to remain until it is evaporated, more or less, from the surface by the solar rays?

(5.) To what elevation, if any, the sites of villages are raised above the inundated plains?

6. The tract of country within which the fever has, during the last few years, appeared in an unusually violent form, extends from the Station of Kishnaghur on the north to Rajahath and the adjoining villages on the south; and from Dwarbashini, six miles from Pundooah, on the west, to Sreenugger, about twelve miles from Chogdah, on the east. Beyond this tract the disease has appeared with extreme virulence in only a few isolated places, as Meherpore, Joyrampore, and Gudkhali. The tract specified is traversed by the Rivers Hooghly, Matabhanga, and Jaboona, and by numerous khals, some of which communicate with the Hooghly and other tidal rivers. In the greater number, probably all, of these khals, throughout the whole or a portion of their extent, the flow of water is obstructed by obstacles natural and artificial.

7. The banks of the Hooghly are higher than the adjacent inland country. The level of the water in the river is, as a general rule, during the wet season above, and during the dry season below, the level of the inland country. Consequently the general direction of the flow of water through the khals, which connect the river with the bheels and low rice lands of the interior, is at the former period inland from the river, while at the latter period the water drains into the river from the interior. As a general rule the Hooghly does not overflow its banks; but in many places, where large churs have been formed, it covers, during the height of the wet season, an expanse at least three times as great as that which it occupies during the cold and the dry hot months. The surface of the infected tract is therefore inundated, for the most part, by rain only, and but to a limited extent by the river water, and is consequently not enriched by an annually deposited layer of fresh alluvial soil as the Districts to the eastward are. Still no inconsiderable quantity of deposit finds its way from the rivers into the bheels; and this, supplemented by a constant process of local alluvion and diluvion which has been long going on in all the bheels, khals, and tanks, effected by the action of rain and wind in washing and driving soil from higher to lower levels—and also in all probability assisted by a gradual, but continuous, rise in the level of the river bed itself,—has, during the last few years, reached a point at which the natural drainage of the country has become seriously affected.

8. The soil is uniformly alluvial mud, with a very considerable admixture of sand. In some villages as Dwarbashini the sandy ingredients predominate. The villages are built along the river banks, which, as above observed, are higher than the neighbouring country, and are also in the interior built on any spots or lines of country the elevation of which is a few feet higher than the level of the water in the surrounding bheels at the height of the rainy season. The proportion of the area occupied by these bheels at that season to that of the country which is never actually submerged cannot be satisfactorily ascertained without a regular survey; but we are probably within limits in estimating three quarters of the whole area of the country to be inundated at some period during the rains. The surface water in the villages disappears after the cessation of the rains in all the modes

supposed in question 4. A portion is absorbed by the soil; a large portion flows from the higher to the lower lands, and thence into the khals and rivers; and a very considerable amount is removed by evaporation.

9. The prevailing cultivation during the rainy season is late

(6.) What the prevailing cultivation is generally, and the condition of the surface in the vicinity of the villages in regard to cultivation, waste land, and conservancy.

rice (áman dhán); during the dry season early rice (áous dhán), peas, mustard, sugar-cane, urhur, and in some places potatoes. At Dwarbashi, where the fever, during the past two years, has been extremely severe, the cultivation of the potato is very extensive, and the grounds are all artificially irrigated. There is but little waste land outside the precincts of the villages.

10. About the houses and within the villages themselves

(7.) To what extent garden cultivation is carried on about the houses or within the villages?

there is absolutely no cultivation, properly so called, but thick plantations of bamboos, and of mangoe and jack trees, are everywhere found. A few pumpkins are here and there allowed to trail over the huts, and in one or two instances only did we observe a diminutive patch of ground planted with tobacco. The surface of the land within the villages is covered with low jungle.

11. The villages are not laid out on any plan whatever.

II.—THE HABITATIONS OF THE PEOPLE.

(8.) As to whether the villages are laid out upon any uniform or general plan, the houses being arranged in straight continuous rows of streets or lines, so as to secure any given frontage to the houses with reference to prevailing winds, and to admit of the exercise of strict conservancy rules and arrangements!

Where bazars exist they consist of shops constructed in continuous, but by no means invariably straight, rows. In this arrangement neither the direction of the prevailing wind, nor the adoption of any conservancy arrangements, have for a moment been kept in view. A hut is built on any convenient spot. The floor and walls are made of earth, procured by digging a hole close by which becomes a receptacle for filth of all kinds. And very generally the plot of ground belonging to the

hut, or batch of huts, is surrounded and hedged in by fast growing jungle and bamboos, by which all ventilation is effectually obstructed.

12. Filth and refuse are generally deposited in, or on the

(9.) Whether there are given places allotted in each village for the collection of filth and refuse, and if so, what are the relative positions of such places to the houses, more especially with reference to prevailing winds?

banks of, any neighbouring khal, or puddle, or hole, but more especially on the river bank, when it is sufficiently near to be readily available. The hole, which, as above noticed, generally adjoins each villager's hut, is too frequently resorted to as the depository of all house-

hold filth. The inhabitants, however, do not appear to be incommodated by the effluvia arising from the matters thus deposited.

13. In no village that we visited were there any public

(10.) Whether there are any public necessities, or other domestic arrangements, for the disposal of filth?

necessaries, or any domestic arrangements of the kind indicated. In the very centre of the Station of Kishnaghur we observed that the people publicly resorted to the open,

and then dried up, bed of the nullah for the purpose of answering the calls of nature.

14. Village huts are usually constructed of a mud floor, with

(11.) What the usual construction of village houses is? How high the floors are raised above the surface? What means are provided against damp and to secure ventilation generally above and below the floor? What the probable square and superficial space allowed for each inmate is, and whether, as a rule, they all sleep on charpoys or bedsteads, or lie upon the floor?

walls either of mud or of coarse mats, and with a thatch roof. The floors are raised from one to five feet above the surface of the ground. Generally there is but one door. It opens into the front verandah, and there is no other opening in the house walls on any side. This, however, is not quite invariably the case. The only protection against damp is afforded by the raised floor.

Ventilation is entirely ignored. In the utter absence of reliable statistics as to the population of any village we visited, it is impossible to say what is even the probable

cubic and superficial space allowed to each inmate ; but we have reason to believe, from the information afforded us, that before the invasion of the epidemic the houses were, as a rule, considerably overcrowded. The poorer classes sleep, for the most part, on mats, on the floors of their houses, and in the verandahs. In the houses of those in more affluent circumstances large low bedsteads are in general use.

15. The ventilation of the houses in which the richer classes reside is not attended to with one whit more care than that of the

(12.) Whether the houses of the better class are more open and freely ventilated above and below than those of the poor, and the conservancy and other arrangements calculated to secure a free space, pure air, better attended to in the house of persons in good circumstances than in those of the poor ? How far the origin and progress of the epidemic appears to have been affected in each locality by the different conditions of the foregoing ?

dwellings of their poorer neighbours. On the contrary the plan upon which the brick-houses of the higher classes are constructed is, with the single exception of their being often furnished with an upper story, the very worst that could be adopted. The filth and scourings of the house are frequently, we fear generally, allowed to trickle through some opening in the floor and brick-work, and lie immediately beneath the

walls. No attempt of any kind is made to secure ventilation.

For a dwelling we should prefer the raised mud floor of the poor man's hut, with its mat walls and thatch roof, to the confined ill-built brick-work of the houses in which the higher classes reside. How far the progress of the epidemic has been affected by the condition of the people's dwellings will be further discussed below.

16. The food of the villagers differs in no wise from that used

(13.) What the food chiefly consists of ? by the Natives of the country generally. It is chiefly farinaceous, consisting of rice, vegetables, spices,

and fish. To this diet the Mahomedans add flesh meat, but of this we believe that they really consume but little. The important fact, however, to be noticed is that of late years no deterioration has taken place in the quality or quantity of the food used. On the contrary, in every place visited by us the

same story was told of an unusual prosperity extending back for some eight or ten years among all classes of the community. Food was good, and, though the price of it had risen, there had been a fully equivalent increase in the means of the people. It must be understood, however, that this favorable description applies to the villages as they existed before they were attacked by the epidemic. Their state is now lamentably changed. In many of them the few survivors, suffering as they are from the debilitating effects and the sequelæ of febrile attacks, are unable to earn sufficient money to provide themselves with food and other necessities. Here and there charitable funds have been organized, with the view of affording wholesome food to the indigent and sick, and of meeting their other immediate wants. Such considerate and well-timed aid has been more particularly and systematically rendered to the villages in and near the Station of Kishnaghur.

17. Our enquiries on this head have been searching and minute, and we regret to be obliged to record that no precautions whatever appear to be taken, either to preserve from impurities the sources of water-supply for cooking and drinking purposes, or in any way to cleanse or purify the water before use. As a general rule, the river water is used by those who reside sufficiently near the river to obtain it without difficulty. Persons residing at a greater distance from the river use tank water, and this is constantly polluted by people bathing and washing their clothes in it. These tanks, gradually filling up as they have been from the time of their first excavation, and being constantly used as receptacles for all kinds of refuse and filth, have become year by year more obnoxious, and the water in them has been rendered less and less fit for domestic purposes.

18. In discussing this section of our subject we propose to describe—

III.—NATURE OF EPIDEMIC.

(15.) As to whether any similar epidemic has been known to occur in Bengal either generally or partially, and wherein it differs from the epidemic of 1833 described in the early Volumes of the Medical and Physical Society, Calcutta, and other epidemics in Bengal?

(16.) What the type of the disease is, and what the organs chiefly concerned? Whether the symptoms are uniform, and the general character of the disease, the same, or modified by season and locality?

1st.—The nature, symptoms, and progress of the disease.

2nd.—Its history and the degree of its similarity to other febrile epidemics which have occurred in this country.

3rd.—The pre-disposing and exciting causes at work.

19. Although, as we have already stated, we visited the chief seats of the disease, we have had no opportunity afforded us of actually observing a recent case, *i. e.*, the case of a person previously healthy who had been recently attacked, for the fever in its acute form gradually disappears as the weather progresses, and a fresh case is scarcely to be found after the month of December. Our opinions have consequently been formed upon the information we have collected from numerous, and in very many instances well-informed intelligent residents of the localities we visited, and from Dr. Elliot's Report of last year. We have, however, had ample opportunities in all the villages we went through of observing the lamentable effects of the disease on the persons of those who have survived its attacks, but still carry about with them the sequelæ of the original malady. The descriptions given us so completely tallied with Dr. Elliot's account that we believe there can be no doubt as to the accuracy of the following conclusions.

20. We may describe this, as Dr. Elliot has described it, as essentially a "congestive remittent fever," characterised in its most deadly and most rapid forms by great general prostration, cerebral congestion, (which peculiarity has gained for this particular fever the appellation among the Natives of "jwar bekâr,") and early collapse, from which the patient, having no power to rally, is cut off in from thirty-six hours to four or five days. The premonitory symptoms appear to be not well marked, but there is little doubt that for some time previous to the actual attack the patient is indisposed, though he seldom pays much attention to this warning. The first stage is ushered in by an accession

of febrile heat, preceded by only slight shivering, frequently by no sensation of coldness whatever. This heat rapidly increases, and the disease runs the quick fatal course we have described. Should the patient, however, escape this deadly and urgent attack, the fever clings to him with unabated violence for a period of from fifteen to twenty-five days from the commencement of attack. During this period many succumb and die from exhaustion. After the fifteenth day, however, remission or intermission takes place, and the heat of skin and more urgent symptoms disappear, leaving the sufferer in a dangerous state of weakness and exhaustion. This freedom from febrile excitement continues for some ten days, when the enemy again assaults him, and though this takes place generally in a less violent and deadly manner than at first, yet from previous suffering and exhaustion the enervated frame is less able than before to withstand the attack, and the result is often fatal. This second attack, as just stated, is in itself less violent than the first, and it is of far shorter duration. The fever now assumes a well marked intermittent type; it returns usually after an interval of fourteen days, at new and full moon, and clings with great obstinacy to its victim. Still though the well marked intermittent type has set in, with its three distinct stages of cold and shivering, hot dry febrile skin, and perspiration, yet it is not by any means unusual for the fever again to relapse into a well defined remittent. Again, all types of intermittent are met with from the true tertian and quartan to fevers recurring at intervals of five and fifteen days; and, as a rule, few who have been seriously attacked completely shake off the disease until change of season has fairly set in, or until they remove from the locality.

21. Such is an account of the more urgent symptoms, but the complications and the sequelæ are of the highest importance. We have described this as essentially a congestive remittent fever, for the reason that the local organic congestions appear to be more marked and more formidable than are usually observed in the ordinary and less dangerous remittents of the country. During a first attack, as we have above noticed, the head is the seat of congestion. The eyes are bloodshot and aching, the face is suffused, delirium early ensues, and collapse terminating fatally in a few hours close the scene. Next in urgency to the cerebral

symptoms we have to deal with a highly congested state of the thoracic viscera, and with great difficulty of breathing, the air tubes being loaded with mucus, and death finally resulting from asphyxia. The abdominal viscera do not appear to be so frequently implicated during the earlier stages, but they are almost invariably affected during the later periods. When the disease has become chronic, and has assumed the intermittent type, enlarged spleens are the general rule. With this the liver also is frequently enlarged and congested, and the intestines are more or less implicated, chronic diarrhœa and even dysentery being no infrequent sequelæ. Anasarca and a general anæmic and emaciated condition are more or less seen in all these chronic cases, and the fatal result is, in the case of the majority of these debilitated wrecks, a mere question of time.

22. In the total absence of any statistics of population it is impossible to arrive at even an approximate calculation of the proportion of deaths to the mass of the people or to the numbers of the sick. It would be most interesting and instructive to ascertain the several proportions of deaths to seizures in the early stage, from the second to the fifth day, from that period to the fifteenth day, and so on throughout the several stages of the disease. But we are unable to do more than hazard a conjecture as to the total mortality in certain villages during certain intervals of time, and upon that conjecture ground the conclusion that these villages have been visited by a disease which in its recent virulent and fatal form, was previously unknown in them. To this, however, we shall recur presently.

23. Such is a general, and, we believe, an accurate, account of the symptoms and progress of this fever. We now proceed to the consideration of our second head, *viz.* :—

Its history, and the degree of its similarity to other febrile epidemics which have taken place in this country. The popular notion entertained of this fever is that it is essentially a new disease. The Natives speak of it as a “*nutan jwar*,” or new fever, and state that they have known nothing so fatal in former times. But it does not appear in point of fact to be either a new or unknown disease, although it certainly has not been known in the villages we have visited in the aggravated form lately witnessed. A similar disease appeared in the neighbourhood of

Berhampore, at Cossim Bazar, upwards of sixty years ago. Its course appears to have been similar to that of the fever now under discussion, and it was at least equally fatal. Further, the causes assigned for its appearance are not dissimilar to those we shall have to notice as having contributed to produce the present epidemic. Babu Degumber Mitter, who speaks from personal knowledge, has supplied the Commission with an account of the fever referred to. (For this account see Appendix I. at the end of this Report.)

24. In Jessore also, in Purneah, in Rungpore, and in fact in most of the low inundated Districts between the Hooghly and the Berhampooter, severe remittent and intermittent fevers have broken out, appearing in some places with greater intensity than in others, but seldom with any complete cessation during the whole period of their continuance except during the hot dry months. Dr. Elliot in his Report informs us that a peculiar fever called, like the present epidemic, "jwar bekár," was prevalent in 1824-25 in the Jessore District, and was very fatal at the village of Mahomedpore, on the banks of the large River Ellenkali, and that it was seen along the Chitra River, and at Nuldanga on the Baeng Nuddee. The well-known fevers of Purneah and Rungpore are of a similar character, and have been known to rage with equal violence and fatality. We may assume, therefore, that the present fever is, if not identical with, at least so similar to the remittent fevers of the Eastern Districts, that it may fairly be considered as of the same class; that it is in fact the true remittent fever of Bengal, and endemic. But it has assumed an epidemic character, and has slowly, but surely, extended itself into localities previously exempted from this aggravated type of disease is a fact which must be admitted. Dr. Elliot clearly traces it from Gudkhali, a large and populous village situated on the swampy banks of a nullah, and surrounded by low marshy ground. In 1840 this village was almost depopulated. From Gudkhali the fever appears to have travelled westward, and in 1845-46 Sreenugger, a large village some twenty-five miles distant, was attacked. Here the fever raged for several years, and having carried off about three quarters of the inhabitants, it extended eastward to the neighbouring villages of Gopalnuggur, Balerampore, and others which still

suffer; southward to Digreeah, Chowbariah, and other places on the Jaboona River; and northward to Simooleah, Gansara, and other villages within a circle of about five miles. It seems after that to have become much more generally diffused. About the year 1850-51 it is heard of at Gourpotha, twelve miles north-east of Sreennggur. It then spread westward through the Villages of Deboogram, Majerkali, Mooragatchea, and others in that quarter, and after nearly depopulating many of them reached Oollah at the commencement of the rainy season of 1856. From this place the epidemic seems to have diffused itself over the southern part of Nuddea, and north-eastern part of Hooghly and pretty generally over the whole Sub-Division of Baraset. Northwards from Oollah it extended towards Kishnaghur, which place and the adjoining villages have suffered very severely during the past year. Southward from Oollah the epidemic extended towards Chogdah, which extensive and populous town has been most severely visited. It reached Chogdah in July 1857. From Chogdah the fever extended along the east bank of the river in a southerly direction, the line of villages including Sooksagur and Kanchrapara in the Nuddea District, and Hallishahur and Nyehattee, &c., in Baraset, suffering heavily. During 1860 Kantalpara, Bhatpara, and others further south on the Hooghly were attacked, and since then the disease has gradually found its way into Jagardiah, Atpore, Sarulia, and Mootapore.

25. Along the west bank of the river the epidemic has shewn itself in a very virulent form, laying waste the populous Villages of Keuta, (adjoining Bandel,) Bausbaria, Trebeni, &c. Dr. Elliot remarks that, though intermittent fever of a severe type seems to have been prevalent in the neighbourhood of Hooghly, still the disease did not appear there as an epidemic until the commencement of the rains of 1860. From Trebeni the epidemic spread along the western bank of the river to Culna in the Burdwan District, all the intermediate villages being more or less severely attacked. From Balaghur, a large village on the river about twenty miles north of Hooghly, the epidemic stretched inland in a westerly direction, attacking the several villages between Balaghur and the large Town of Pundooah on the East Indian Railway; and then skipping over a number of villages to

the west and south, it broke out in a concentrated form at Dwarbashini, a large village situated seven miles south-west of Pundooah, and standing upon more elevated ground than any of the localities previously mentioned. Returning to Oollah we trace the epidemic inland in a southerly direction to Goipara, Bara Jagoolee, and Duapore; to Baraset and the neighbouring villages; and especially along the course of the Sultee Nuddee.

26. From the above it appears pretty clear that the present epidemic can be certainly traced back to Gudkhali in the year 1845; that it had extended to Oollah in 1857; and that it has since encircled a large tract of surrounding country. But in specifying Gudkhali as the starting point of the epidemic now under consideration, we would by no means imply that it originated there, but merely regard this point as a westerly limit of the tract which forms the proper domain of the remittent fever peculiar to the eastern inundated District, from which point the fever has now gradually extended in a westward and south-westward direction.

27. The particular seasons at which year by year the epidemic has appeared, reached its height, and again disappeared in the various villages attacked by it, form an important subject for observation. The information received on this point has been precise and uniform. In the month of May, and even in April, after the first falls of rain, severe cases have been noticed, but they have been generally too few in number to cause much alarm. Seizures, however, have become more and more frequent during the next two or three months, until in August or September the disease has reached its full height. Heavy mortality has lasted until November, when it has begun to abate, and by the end of December almost complete cessation has taken place, to continue until the succeeding May. Again it must be observed that the first season has generally been less fatal to the invaded village than the second. After periods, too, of from two to six years the disease has apparently left the infected village altogether. But we fear that this result is quite as much attributable to the disappearance of the inhabitants as to any accession of salubrity to its climate. An allowance must also undoubtedly be made for the gradual acclimatisation of a number of the survivors.

28. We proceed to consider our third head—"The predisposing and exciting causes at work."

In entering upon this inquiry it is, we consider, of importance that we should, as clearly as possible, explain certain Laws which are now recognised as regulating the course of diseases of both an epidemic and endemic character, and shew the causes without the existence of one or more of which such diseases would, in all probability, be unknown.

29. The existence of a peculiar agent, which is generated in a manner which is very imperfectly understood, and the constitution of which is equally uncertain, but which is called *miasm* or *malaria*, is by all who have studied the subject allowed to be the chief source of endemic and epidemic diseases. It would be foreign to our present purpose to discuss the various theories which have from time to time been offered, and received as worthy of the attention of scientific men, regarding the actual nature and constitution of miasm; but it may be accepted as fully established that the conditions which are necessary to generate this miasm "belong to the localities which are affected and not to the inhabitants" (Alison); and further, that to whatever extent accumulations of organic matter, animal or vegetable, or both, may tend to produce disease generally, and aid in keeping up and strengthening true epidemics, yet the products of such accumulations are not essential to the existence of true miasm. It appears to be a substance *sui generis*, probably generated in the soil, and apparently requiring at least one agent for its creation in large quantities, *viz.*, damp. As a rule it is found to exist in a concentrated form, and "diseases are most prevalent in situations where moisture is most easily and most copiously generated, in valleys, on the banks of rivers, near shallow marshes, in the vicinity of mangrove plants, and where a favorable condition of the surface exists to accelerate the process of evaporation" (Craig on Epidemics.) Malaria is extricated from the margins of large lakes and the banks of rivers. Mr. Parkins, in his Work on the "Causation of diseases," remarks as follows:—"Let but the smallest portion of the margin or the muddy surface of a lake become exposed, and the poison will, if the temperature of the atmosphere be sufficiently high, be immediately evolved." Miasm again is given out from, and

exists in greatest amount on, alluvial soils; the embouchures of rivers; and specially in the beds of old rivers which have silted up, or are gradually filling up, and leave extensive areas of half dried land exposed to the influence of heat; from "irrigated and partially inundated lands, or such as are traversed by percolating streams or by canals; in wooded Districts termed jungles; or in certain Hill Districts. The seaboard, especially where there is jungle or salt marsh, and the adjacent islands when of a jungly or marshy nature are peculiarly pestilential, and so are often found drying-up marshes, and the drying-up beds of rivers" (Martin on Influence of Tropical Climates.)

30. An admitted property of miasm is that, except when much rarified by heat, it is specifically heavier than atmospheric air, and is consequently found in the lowest strata of the atmosphere. It has a tendency to float along the surface of the ground, and to gravitate into fissures, ravines, and holes. It exists in a more concentrated form immediately over the earth's surface during the night than in the day time, and the most dangerous hours in malarious tracts are those between sunset and sunrise. As the sun gains power the miasm, like aqueous vapour, appears to be elevated into the higher regions of the air, and to become greatly diluted. It is thus rendered more and more innocuous until the evening, when, the temperature being again lowered, it gravitates again and collects on the earth's surface.

31. The searching investigation which has been made into sources and qualities of malaria has enabled scientific men to arrive at a number of laws which appear to regulate its production and distribution. Some of these laws we enumerate:—

Law 1.—The malarious poison, although not confined to such situations, is extricated in greatest abundance from low, marshy, and alluvial soils.

Law 2.—Malaria is extricated from all wet lands, the muddy surfaces of marshes, and the slimy banks of lakes and rivers during what has been termed the drying process.

Law 3.—Malaria is never extricated from the surface of water under any conditions whatever so long as the particles of that fluid hold together.

Law 4.—Malaria becomes innocuous at a certain distance from the source whence it is given out.

Law 5.—The specific gravity of malaria is greater than that of atmospheric air.

Law 6.—The interposition of a forest, a mountain, a wall, or even a mere cloth, is sometimes sufficient to preserve an individual or individuals from the pernicious effects of miasmata given out on the opposite side.

32. This malaria must be recognised as existing in great quantity over the tract of country at present suffering from the epidemic, and as owing its excessive production mainly to the increasingly deficient natural and artificial drainage of the country, in consequence of which the soil is kept saturated with moisture for a much longer period after falls of rain than it would be were the surface water more rapidly removed.

33. We now proceed to notice other local conditions and other agents which are individually and collectively powerful aids to miasm. We assume that air, light and water are essential for the preservation of life; that if any one or all of these are polluted or deficient the result is directly and immediately injurious to the health of animate beings; and that if this pollution and deficiency be excessive, actual disease and death must ensue: that, on the other hand, if we could obtain sufficient light, pure air, clean water and adequate ventilation, we should reduce epidemics to almost an insignificant quantity. Now in the villages throughout Bengal, and in a most marked degree in those lately visited by us, there is neither sufficient light, pure air, clean water, nor adequate ventilation. Thick closely packed trees and bamboo clumps, standing in dense masses of low jungle, crowd the villages and prevent anything approaching to a free current of air through them. The atmosphere is perceptibly damp and heavy, and over large areas the direct rays of the sun never penetrate through the overhanging foliage. The ventilation of the houses of all classes is deficient; is in fact totally ignored, as we have above observed. As for the water used by the inhabitants for domestic purposes, it would be impossible to imagine anything more utterly unfit than, as a general rule, it is for the purpose. We have pointed out that the creation of a hut necessitates the digging of an adjacent hole. Every village is honey-combed with such holes. There are other larger holes, formerly, no doubt, deserving the name of tanks, which have gradually silted up, and from these holes and old tanks the

people obtain their drinking water. Upon this evil we have enlarged above (paragraph 17). It is only necessary to add that from the margins of these pools emanations from decayed and decaying vegetable matter consequently rise to taint the air, and aid the deleterious effect of the miasm, which, as we have observed, is being constantly given out from the soil. Vegetable decomposition again and its products are not the only impurities we meet with. In the Mahomedan quarters of villages the dead are constantly buried on the very borders of the tanks. Here and there cemeteries are to be found, but even in those places they are not exclusively resorted to. Graves may be seen scattered about in very direction; and these graves are seldom made sufficiently deep to ensure the people against poisonous exhalations from the interred bodies. The bodies lie so near the surface that sometimes, as is well known, they are disinterred by jackals and dogs. The Hindoos in ordinary times pretend to burn their dead, but even at such times only a few bodies are effectually destroyed. In most cases the half burnt remains are left to be devoured by birds and animals, and many bodies are simply thrown away, without funeral rites of any kind, into nullahs and rivers. In times of great mortality Hindoos and Mussulmans alike abandon all attempt to dispose of their dead with respect and decency, and bodies are recklessly thrown out in all directions, poisoning the air for miles with the foulest effluvia.

34. To enlarge further on the prolific sources of impurity and contamination which exist in all these villages would be superfluous. The appearance of the villages speaks for itself to the most casual observer: The only wonder is, that people of weakly constitutions, subsisting on farinaceous diet, residing in a malarious climate, and shutting out from themselves the air and light of heaven, and drinking poisoned water, have not suffered even more extensively. But, it may be urged, all these causes of disease have been in operation for many years in many places which have never until lately been attacked by depopulating sickness, and are now in a number of places which are still free from the scourge. Why, then, lay so much stress on these facts in accounting for the present epidemic? The objection, however, is not so strong as it appears at first sight. We have already pointed out that the fever we have been observing is by no means a new or unrecognised disease, and that other parts of

Bengal have been from time to time devastated to an equal, if not a greater, extent. The mortality at Cossim Bazar sixty years ago, where the same causes as those just considered were at work, we understand to have been even greater than any that we have lately witnessed. In Purneah every now and then we hear of these deadly outbreaks of remittent fever, the country being absolutely strewn with dead and dying. So in Rungpore and Jessore, in the low ill-ventilated villages lying along particular nullahs and half stagnant rivers, such as the Baeng Nuddee, the upper Nobogunga, the Bhoirab, and the Chitra. The fact is that in the tract of country which has been of late so severely suffering, as in the other tracts which we have mentioned, the various causes of disease have ever existed; but within the last few years they have been gradually culminating until in one place after another the turning point has been reached, and villages, the previous exemption of which had served to conceal the fact of their increasing liability to it, have been swept by the pestilence. It must be specially observed that the instances in which the visitation has come without any warning are very few. In one village after another the story has been told of one or two years of progressively increasing illness *preceding* the year in which the epidemic has burst forth with overwhelming force.

35. In speaking of the causes of epidemic fevers, and of the present fever specially, we have omitted to notice the effect of contagion. Our enquiries have not established the contagious nature of this fever. On the contrary a remarkable circumstance related to us at Gram Culna seems to bear evidence to its absolutely non-contagious character. We were informed that a considerable number of people, residents of a village named Kooroona, situated at some little distance, attended a "shrad" at Gram Culna; that while there they all fell sick; some died there, others returned to their own village, and they also subsequently died. But the disease did not spread in Kooroona; no inhabitant of that village who had not gone to Gram Culna caught it. We can hardly credit the assertion that *all* the visitors from Kooroona to Gram Culna died, and we could not ascertain the actual number. But the story at all events seems to shew that the disease was not transferred by contagion from the one village to the other. Kooroona stands high and is free from excessive vegetation, and the tanks are comparatively clear and

open. Viewing contagion in the widest meaning usually attached to the term, we have no sufficient grounds for stating that it is characteristic of the present fever. Still it is highly probable that the disease may be directly communicated by the effluvia of numerous sick persons congregated together in small ill-ventilated houses.

36. A highly important subject in connection with the history of epidemics is the meteorology of the country in which they occur. But with reference to this branch of our subject we regret that we have not been able to collect data on which to found any certain practical conclusions. Minute and trustworthy meteorological observations have not been made in Bengal; and as the general progress of the present fever does not appear to have been affected in any marked degree by the great variations which have undoubtedly occurred in the seasons during the last eight or ten years, any detailed consideration of the probable effects of such variations upon the public health would be little better than useless speculation. We have already referred to the stages of gradual increase, greatest intensity, subsidence, and complete cessation which generally characterize the course of the disease throughout the twelve months from May to April. We may here add that the mortality is to a great extent kept up during the cold weather by the fatal termination of chronic cases.

37. Having thus far discussed the chief causes of the prevailing epidemic, we might conveniently proceed to draw some practical conclusions as to the measures which suggest themselves for their removal. But, following in regular order the subjects of inquiry enumerated in the Government letter, we defer this branch of the subject for consideration in our answer to Question 22 below.

38. The disease appears to have attacked all classes of people, Hindoo and Mahomedan, rich and poor, men, women, and children, indiscriminately, but the mortality has naturally been greatest among the poorer classes. The total mortality in each village and throughout the whole infected tract is a point on which we can only hazard

(17.) Whether the rich as well as the poor are subject to it, Mussulmen as well as Hindoos? Whether any particular case and class or classes have more easily succumbed to the disease, or been more free from it than others.

a very uncertain conjecture. The remarks on this head, contained in Dr. Elliot's Report already referred to, are accurately descriptive of the then existing and of the present state of matters. He writes:—"Many large large 'baries' in which there were formerly thirty or forty residents have now been left with perhaps one solitary occupant, whole mohullas and streets have been deserted, and large villages which formerly told their residents by thousands can now almost number them by hundreds." The total population of Oollah was stated to have been 18,000 to 20,000 before it was attacked, and it was calculated that at least 12,060 of these had fallen victims within six years. The Village of Sreenugger has been almost depopulated. At Culna three-fourths of the inhabitants have been carried off. Upon the whole we believe that above 30 per cent of the whole population of the infected area have died.

39. In prosecuting our inquiries as to the influence of sex and age upon the susceptibility of individuals to attack we ascertained that pregnant women constantly miscarried after or during an attack; and that it was believed that children born at the full period of fever-stricken mothers had in some rare instances, been born with enlarged spleens. If this be true, it proves that the disease of the mother had been communicated to the child "in utero." Very young infants were frequently attacked. It was further remarked that in diseased villages very few births took place—a very natural circumstance when the state of the surviving adults is taken into consideration.

40. We fear that, even under ordinary circumstances, there is a deplorable want of efficient

IV.—ATTENDANCE UPON THE SICK.

(18.) As to how the sick are attended to and looked after in their own houses.

attendance on the sick; but when an epidemic rages, and large numbers have been attacked, the attendance is of the most wretched description. This is not to be ascribed to want of feeling on the part of friends but to want of ability. There are no charitable hospitals for the poor, and of medical aid there is generally none deserving the appellation, except where dispensaries have been established by Government. The more affluent members of the community can and do command such Native medical aid as is available,

and on such aid they, as a rule, solely rely, and they of course are able to procure sufficient personal attendance.

41. The sympathies of the wealthier classes have been to a very slight degree enlisted in favor of their poorer neighbours. Indeed in most places the efforts made by the Zemindars and other well-to-do people in the Mofussil to assist their ryots may be, without injustice, described as 'nil.' It is to be feared

that in some instances where collections of money have been made to defray the expense of sanitary improvements, contributions have been extorted from those who were ill able to pay them, while the richer inhabitants put their names down in the subscription list for sums of the insignificance of which they ought to have been ashamed, and the full amounts of which they did not, in point of fact, subsequently pay up.

42. These remarks must not, indeed, be considered of universal application. Some exceptions stand out in pleasing relief, and we would willingly record them, but that in so doing we should bring forward individual names without sufficient warranty. We have already mentioned the charitable exertions made at Kishnaghur to aid the suffering poor.

43. The Native Doctors appointed to the charge of the dispensaries in the Districts affected by the fever are, as a general rule, of little use, except where they are strictly supervised. Of those at present employed under Dr. Elliot he can only refer to two as having done really good service, *viz.*, Broja Lal Dass, at Trebeni, and Sheikh Jellalooddeen, at Balaghur, both in the District of Hooghly. Both these men he considers very intelligent, well qualified, and thoroughly trustworthy, and deserving of better appointments than they now hold. The others, he believes, are hardly known beyond the limits of the villages in which

(19.) To what extent the sympathies of the wealthy classes have been enlisted in aid of the poor during the epidemic? Describe the steps they have taken with this view?

(20.) Whether the Sub-Assistant-Surgeons and Native Doctors appointed to the charge of dispensaries for the relief of the poor take an interest in their duty? Describe results when this form of relief has been available, shewing to what extent it has proved successful or otherwise in checking the progress of the disease?

they happen to have been located, and some of them are not well spoken of even in those villages. The Sub-Assistant Surgeons he considers to have been a complete failure. The two sent to Purbastolee both left their posts after a very short residence. Dr. Elliot further observes :—"The general complaint is, that there is a want of European medicines. To this I can only reply that if all the medicines supplied by Government, and distributed month by month from this Office, had been properly administered, the result ought to have been most satisfactory. Unfortunately this has not been the case, and I am therefore led to suppose that in many instances medicines have either not been administered at all, or have been sold to such only as are able to pay for them."

44. The means already adopted with a view to putting a

(21.) How far the general measures hitherto adopted with a view to the prevention of the spread of the disease have been attended with manifest and beneficial results? Describe wherein they have probably failed?

check on the progress of the epidemic have been, in their general object and intention, good and sound, but they have hitherto proved insufficient, and that for fully adequate reasons. Contributions have been levied in several villages, and these have been supplemented by certain grants from

public funds for the purpose of carrying out sanitary improvements. By an expenditure of this money jungle has been in many places extensively cut down; small filthy pools have been filled up; some larger and better tanks have been cleared; in some places roadways have been raised or newly constructed, and some attempt made to render the small excavations along their sides available for purposes of drainage. Many of these operations, especially the cleansing and filling up of tanks and pools, have been most proper and well-devised, and the burden of proving that they have been altogether useless lies on those who make the assertion. But that they have not yet been effectual in putting any *sensible* check on the progress of the epidemic is, in our opinion, mainly owing to the following causes :—

1st.—The attention of the Local Authorities has been specially drawn to the subject only during the last three years, and at first sanitary measures were attempted only in a few isolated places

where the epidemic had already broken out. As the fever spread sanitary operations were undertaken with greater energy, and in a greater number of villages, but still not on a scale commensurate with the growing magnitude of the evil. Now, wherever the fever has attacked a village with great violence, nearly the whole population have been seized,—one-third, one-half, or more, have died off at once, and the rest have been left with shattered constitutions and many forms of chronic disease, from the effects of which great mortality has continued among them during the next and following years. No sanitary measures can be expected to save the lives of people upon whom the *first blow* of such a calamity has fallen. Sanitary measures to produce extensively good results must be preventive rather than remedial. Except in a very few instances no such preventive measures have been adopted, and those only on a small scale.

2nd.—But villages which are now almost depopulated will be gradually filled again with inhabitants, unless fresh attacks of the epidemic carry off or irremediably debilitate the few survivors who have altogether escaped its ravages, or entirely recovered from its effects. To save these people is an object of unspeakable importance; and as a means to this end the sanitary operations already undertaken in villages which have seemed hitherto to derive little or no benefit from them must be regarded as so much real and valuable gain, in so far, that is, as they have been conducted in a judicious and efficient manner. To say, then, that such operations have failed, is merely to say that they have not had time to succeed.

3rd.—But it must be admitted that these measures, where they have been initiated, have not been carried out with sufficient judgment and intelligence, or on a sufficiently extended scale. For this the Local Authorities, we submit, are not to blame. The work requires a minute supervision, which it is impossible for Magistrates, occupied as they are with their numerous other duties, to exercise, and an agency and funds which are not at their disposal for the purpose.

Under the circumstances we do not think it wonderful that so little visible good result has been produced over a large tract of country by the exertions of a handful of Officers.

45. In reply to the first of the two inquiries contained in this

(22.) Suggest any measures that may, on full consideration of the results of the past, appear to be likely to ameliorate the present condition of these Districts both in the form of providing some generally available means of procuring medical advice and attendance, and also in introducing a practical system of sanitary reform?

section we beg to offer the following remarks :—We believe that in Calcutta the Native population commonly employ qualified medical practitioners. Such practitioners, too, undoubtedly find ample occupation wherever they set up for themselves in the Mofussil, so much so indeed that the public service is suffering from the exodus of many of its best Native Doctors, who, after having gained a certain amount of experience in Government employ, find it to their interest to retire and practise on their own account. There are also acknowledged "Hukeems" and "Koberajes," who are quite competent to treat disease successfully. But there are hundreds of utterly unqualified persons engaged in distributing drugs throughout the country,—men who know little or nothing of medicine beyond the names of the drugs they use, and who, instead of affording relief to the suffering, screw the last pice out of them, and hasten and embitter their passage to the grave. We were credibly informed that one of these impostors purchased an ounce of quinine in Calcutta for Rupees 5, went into the Mofussil with it and returned with a clear profit of Rupees 50 on his speculation. And even a Mehter, who had been discharged from Dr.——'s employ, tried his hand, with considerable pecuniary success, on the higher occupation of physicking. This being the case the question arises, should Government not lend a helping hand to protect the qualified practitioners and put down the ignorant and mischievous quack? It is evident, indeed, that little can be done without the co-operation of the people themselves. And if, in the opinion of Government, legislation in this direction be advisable, whether by the introduction of a system of registration of qualified Doctors, or otherwise, a careful inquiry should be made, and the fullest publicity given to the intentions of Government, in order to elicit the opinions and wishes of the people on the subject. We believe that some action of the kind might be taken with very advantageous results, but we are not in a position to consider in detail a question of such great importance and requiring such extensive and minute investigation.

46. In the event, however, of a future spread of the epidemic to places hitherto unaffected by it measures should be at once adopted to afford the inhabitants better medical attendance than is at present available. On this point Dr. Elliot remarks :—" I think that a staff of good Native Doctors, with perhaps one Sub-Assistant Surgeon to a Circle of five or six villages, should be appointed and located in central places at the very commencement of the outbreak. A full supply of the most necessary medicines should be made available, and the whole ought to be placed under the superintendence of an Assistant-Surgeon selected specially for the purpose. Mere temporary supervision is of little or no use, as orders given during a cursory visit to a dispensary are often either forgotten, or simply disregarded if they do not suit the fancy or convenience of the Native Doctor. Should the disease appear at places far distant from each other, the Superintendent could move from place to place, remaining at each so long as he may think necessary." In these recommendations we all fully agree with Dr. Elliot.

47. The remarks which we have recorded upon the present sanitary condition of the villages visited by us indicate of themselves, to a great extent, the measures which should be adopted to improve that condition. Before proceeding to discuss those measures specifically, it will be well shortly to recapitulate the causes to which we have been led to ascribe the prevailing sickness. They are—

(I.)—Miasm.

(II.)—Polluted drinking water.

(III.)—Vitiating air and deficient ventilation.

(IV.)—The excessive use of farinaceous food.

(V.)—(To a slight extent) contagion.

48. Our first object must be to reduce, as much as possible, the supply of miasm. Again assuming, as scientific researches justify us in assuming, that moisture in the soil is the grand source of malarious exhalations, and remembering that those exhalations rise from the ground principally during the drying process, and in much less quantity when the country is extensively inundated, we are led at once to the conclusion that any means by which this drying process can be accelerated and shortened will produce a *pro tanto* diminishing effect on the total amount of miasm generated. To effect this object the

obvious course is to improve the drainage of the country. *No doubt considerable difficulty will be experienced in carrying out measures undertaken for this purpose in consequence of the very circumstances which have rendered those measures so imperatively necessary. The gradual silting up of rivers and khals, and the general assimilation of levels, to which we have before alluded as having been gradually taking place of late years, has of itself reduced the facilities, which might formerly have existed, for effecting a regular and rapid removal of the surface water from the villages upon the subsidence of the inundation. But the difficulty will be probably nowhere found insurmountable. There is still everywhere a sufficient inequality of level to admit of the surface water being quickly and effectually carried off, if the natural fall of the ground be judiciously assisted by artificial means. We do not think it would be possible to dig out the old nullahs and khals, but they might be deepened in many places, and all absolute obstructions to their course, such as embankments, completely removed. They might thus be converted into large efficient surface drains, and would be available as the basis of a general system of drainage in all the villages situated along their banks. With a view to improving the internal drainage of particular villages we would strongly recommend the construction of open water-ways, so arranged that the surface water within the village should be carried by them directly to any neighbouring river, khal, or bheel that may be available, or failing such to some one or more low pools or tanks *outside* the village. The object cannot be attained satisfactorily by draining the village into tanks situated within its boundaries, for at the season when means of carrying off the surface water are most urgently called for, these tanks are for the most part full, and the flow of water through the drains would be stopped, or from time to time even reversed. The diversion of the surface drainage from the tanks to low grounds outside the village would also tend to diminish the injurious process of diluvion by which the tanks are constantly being filled up with the debris of their banks. It would also obviate, to a great extent, the accumulation of refuse matter of all kinds in the water used by the inhabitants for drinking and washing purposes.

49. In many places along the banks of the Hooghly we were informed that the drainage of the country had been seriously

obstructed by the Railway embankments. As to the truth of this statement we have been unable to arrive at a satisfactory conclusion, because the effect of the embankments upon the subsidence of the surface water can be made matter of direct observation only towards the end of the rainy season. Remembering, however, that the direction of the natural drainage of the villages situated along the river banks is inland, we have no difficulty in believing that it is impeded by the Railway embankments on both sides. The point should be carefully enquired into at the proper season of the year. We think it also highly desirable that, at the same season, the Local Authorities should be required carefully to examine whether, in the numerous new road-ways that have been constructed throughout the tract under observation, sufficient waterway has been allowed. For, though bridges and culverts are, we know, made wherever khals and nullahs intersect the roads, we have grave doubts whether the general course of the surface drainage over the country, and the necessity for allowing full and immediate passage for the whole mass of water, are points which receive much attention in surveying and preparing estimates for new roads. Some important information upon this point, contained in a memorandum supplied by Babu Degumber Mitter, will be found in Appendix No. II.

50. We fear little can be done towards lessening the production of miasm or churs, and from the beds of rivers, beyond keeping them under cultivation. This is already done. Such lands are rich and valuable and are carefully cultivated.

51. For impeding the generation of miasm generally we have no recommendation to offer except the acceleration of the drying process at the end of the rains by artificial drainage. Some means, however, are at our disposal for the destruction or decomposition of the poison after it is formed. Miasm is decomposed by ozone, which is found ready formed in the atmosphere. It is also decomposed by carbon, and advantage should be taken of this fact by encouraging, as far as possible, the burning of weeds, dried grass, jungle, &c., and the lighting of fires in as close proximity to dwelling houses as may be compatible with their safety from conflagration. This practice should be especially followed during the most unhealthy months, and after nightfall. It is a simple and comfortable practice, and its good effects have been noticed over and over again wherever it has been adopted

throughout the world. It is evident again that miasm may be robbed of much of its deadly power by dilution and dispersion. Free exposure of the lowest stratum of the air to the sun's rays, and adequate ventilation, are the expedients which naturally suggest themselves. These we will consider in their proper place below.

52. In endeavoring to improve the general sanitary condition of villages, and so render the inhabitants less obnoxious to the evil influence of malaria, one of our principal objects should be to provide a full supply of pure drinking water. In every village certain tanks, in suitable situations, should be set apart for drinking water only. They should be made of sufficient depth, their banks should be sloped and turfed, and kept clean, and the surrounding ground should be kept clear of trees, bamboos, and jungle, in order that the water may not be rendered unwholesome by the constant fall of leaves from overhanging branches, and by accumulations of other vegetable debris. This cannot be effectually done unless these tanks are placed in charge of the Police, or in some other way constantly protected. Bathing and washing clothes in them should be absolutely prohibited, and they should be carefully cleaned out and deepened at stated periods. •

53. We have stated that the people never filter or in any way purify the water they use for domestic purposes. We endeavored to ascertain whether public filters and reservoirs would be resorted to if they were so managed as to entail little expense, and were placed in the charge of persons of the same religious opinions as those for whose benefit they were constructed. The replies were unsatisfactory, and, as a Government measure, we do not think the plan would succeed.

54. The next desideratum in the order in which we have proposed for consideration is the purification of the air and its free passage through the villages and houses. It will have been already observed that we draw a marked distinction between miasm, properly so called, and general vitiation of the atmosphere. The latter may be produced by a number of separate or concomitant causes, and may be very prejudicial to health, whether the former extensively co-exist with it or no. It is a great mistake to confound malaria and effluvia, but many gaseous emanations,

odorous and inodorous, besides true miasm, are injurious to the human frame, and render it more obnoxious to attacks of disease, however those attacks may be directly induced. On the other hand the measures which would tend to check the production and aid the dispersion of all such noxious emanations would also be of service in diminishing the supply of true malaria in the same localities.

55. The first thing to be done with a view to purify the air in these villages is to fill up the small filthy holes which abound in them, and to deepen and clear the larger pools and tanks. Any hope of fully and thoroughly carrying out this most necessary measure of sanitary reform we fear to be chimerical. Could the inhabitants themselves be brought to see the necessity for it, and to co-operate with the Authorities, something effectual might be done. A number of small holes might be filled up with the earth taken from a large tank newly constructed or deepened; and in building new houses the necessary excavations might be made in such a way as to assist the general drainage of the village, instead of forming fresh receptacles for dirty stagnant water. The open ground, and especially the edges of tanks, might be kept clear of at least the grosser forms of pollution, and people might be induced to resort to particular circumscribed localities for the deposit of household filth and refuse. But in spite of the generally prevailing apathy and the universal resistance to the smallest authoritative interference in the manner in which the occupants of land, whether of large or small extent, choose to dispose of it, we believe that a good deal may be done by firmness and perseverance. Before leaving this part of our subject we would suggest that a number of holes situated near the river bank might be filled up by connecting them with the river by small khals. A glance at the numerous brick fields along the river side will shew the effect produced by the silt annually deposited by the river in the pits from which the earth has been taken.

56. The question of jungle-clearing next claims attention. The main objects to be compassed in clearing away vegetation are the admission of the sun's rays to a sufficient proportion of the surface of the ground, and the removal of obstructions to a free passage of air. By effecting the first object we secure the

more rapid evaporation of surface moisture, with a corresponding diminution in the total amount of miasma evolved during the process, and also the rarification and dilution of malaria and of other noxious vapors actually produced; and by carrying out the second object we assist materially the dispersion of all such vapors. We avoid entering into any discussion of the theory, originated some 1,800 years ago by Pliny, that vegetation absorbs miasm. Such may be the fact, but even if it be, there is no fear that any measures which may be adopted for the removal of jungle in Bengalee villages will ever reduce the total amount of vegetation below the point necessary to its efficiency as a malaria absorbent. On the other hand we desire to impress two facts strongly on those who may be entrusted with the duty of clearing jungle,—one, that living vegetation is never in itself a producing cause of malarious exhalations; and the other, that in certain situations it acts most beneficially as a mechanical bar to the spread of miasm generated in its neighbourhood, and a belt of thick trees and jungle *may*, therefore, be a great protection to a village instead of a source of unhealthiness. It is so wherever it is interposed between the village and a *more* malarious tract in its vicinity. Decaying vegetable matter, however, is always injurious, and measures should be adopted to oblige the occupants of lands to keep their orchards and bamboo plantations clear of the thick accumulations of fallen branches and leaves which in most places completely conceal the ground. With this a great deal of the low brushwood, which so greatly favors such accumulation, may doubtless be removed with great advantage. But, as we have already intimated, we recommend the use of the greatest caution and judgment in cutting down growing vegetation. Wherever it is cut down it should be burnt, and the cleared ground cultivated. It is true that freshly turned soil is itself sometimes a source of noxious exhalations, but this is a passing evil, and not at all as serious as the evil to be anticipated from the rapid fresh growth of the jungle which invariably takes place on ground where clearing operations have not been supplemented by the uprooting of the numerous plants which have been cut down.

57. Some well-devised measures should be carried out in all large villages for the proper disposal of dead bodies. In Mussulman quarters particular sites, well removed from any drinking

water tank, should be selected for burial grounds. They should be situated on the north and west sides of the villages, so as to be to leeward during the rainy season, and the burial of dead bodies in any other places should be prohibited. The burial grounds themselves should, of course, be kept in the charge of Mahomedans, who should receive some regular remuneration; and it should be their duty to see that the graves were dug of a proper depth. We would suggest four feet as the minimum. The burial expenses of paupers should be borne by the villages to which they belong, or be defrayed from any municipal or other funds that may be available. In Hindoo quarters the universal and effectual disposal of corpses by cremation is an object which should receive most careful attention from the Local Authorities. The burning of bodies should be confined to particular spots, and those places should be placed in the charge of persons responsible to Government Officers for the proper and thorough destruction of bodies, and for the general cleanliness of the spots used for the purpose. Such arrangements will involve, as in the case of burial grounds, certain public and private expenditure. The exact manner in which the necessary funds should be provided it does not seem within our province to discuss. We cannot, however, urge too strongly the necessity for the adoption of the measures we have recommended under this head.

58. The general progress of sickness is doubtless much accelerated by the collection of numbers of sick in close ill-ventilated houses. To induce the villagers generally to adopt some other plan of construction in building their huts we fear would be a hopeless attempt. They are wedded to old custom, and cannot be persuaded to abandon it. If, however, the occasion be considered as sufficiently grave to warrant what would otherwise be an arbitrary and vexatious interference with private preferences, we have no doubt that the adoption of some means of ventilation in the construction of new houses might be readily enforced by Law. The occasion is a grave one, but we are scarcely prepared to recommend the employment of such unusual measures to meet it.

59. We have alluded to the excessive use of farinaceous food as a predisposing cause of disease, but we need not enlarge on this point, as it would be manifestly absurd to expect that the

people of this country could be persuaded to make any material alteration in their diet.

60. It can hardly be said that any mode of treatment hitherto adopted has proved altogether successful, probably because few of those who recover from the first attacks of fever are able to remove from the localities in which they were first taken ill, and in which the exciting causes of the disease in all probability continue to exist in full force, and so all who have

once suffered are liable to constant relapses, which debilitate and eventually wear out the system. A large proportion, too, of the most virulent cases have terminated fatally before any medical aid could be obtained beyond what is at hand in almost every large village, and it is to be feared that the fatal result has frequently been hastened, rather than retarded, by unsuitable and untimely interference.

61. Experience has shewn that in the treatment of all cases it is necessary in the first place to regulate the bowels. For this purpose Rhubarb, Scammony, and Soda appear to be most suitable. To these, in the absence of spleen, a grain or so of Calomel may be added. After this small doses of Ipecacuanha Powder, Soda and Nitro, or any of the other drugs which are known to lower the pulse and favor cutaneous action, should be administered. The application of cold to the shaven head, and sponging the body with Nitro-Muriatic Acid and water, or with vinegar and water, prove useful; and cooling or effervescent draughts relieve nausea and abate thirst. These, repeated from time to time as circumstances may demand, seem to be the chief remedies which are of any service. But it must be borne in mind that, do what we may, the disease must in all probability run a certain course, which is neither to be accelerated nor retarded by any means within our reach. After, therefore, placing the sick in a condition as favorable to recovery as circumstances admit, it appears that we must proceed to a great extent on the expectant system, save the strength as much as possible by avoiding the use of unnecessary medicines, such as strong or

drastic purgatives which debilitate and depress the system, and guard, if possible, the functions necessary to life from sustaining serious injury. It is also necessary to observe the prevalent type of fever, and to note carefully the mode in which the fatal result or the most serious organic lesion most usually takes place.

62. Cases are not frequently met with without some complication existing from the first, and if, as is constantly the case, the tendency is to cerebral or pulmonary congestion, these local inflammations must be met by antiphlogistic remedies in the ordinary way. In the case of cerebral congestion, shaving the head, cold douche, application of ice or a few leeches or (later) a blister to the head, purging if there is no previous diarrhoea, so as to produce one or two fluid motions daily, are the remedies most urgently demanded. Placing the feet in hot water once or twice daily is also productive of benefit in such cases. Chest complications are to be met by Ipecacuanha or the Tartrate of Antimony, externally by Turpentine fomentations, and afterwards by counter-irritation with blisters, &c.

63. The greatest tendency in the course of the fever is to congestion of the liver or spleen, or of both, to obviate which all remedies seem to have failed. With each relapse of fever there appears to be a fresh tendency to sub-acute inflammation and consequent enlargement of the spleen, until at last a sort of local inflammatory action of low grade seems to be established, to which, perhaps, the successive attacks of fever are in some measure to be attributed.

64. In the absence of actual fever bitter tonics, with Iron, Quinine, and the Mineral Acids, prove useful. The greatest benefit seems to be derived from a combination of Carbonate of Iron, Quinine, Rhubarb, and Soda, to which a little Compound Jalap Powder may be added occasionally. In the intermittent type of fever, after the bowels are regulated, Quinine is the only antiperiodic which is of any service whatever; and even its effects seem to be only temporary, for, notwithstanding the steady use of it for days, fresh attacks of fever occur at intervals of from ten to fifteen days, attended with further congestion and enlargement of the spleen or liver, or both, till at last the system is worn out and dropsy, diarrhoea, dysentery, or some of the other sequelæ terminate an existence of protracted misery.

65. In conclusion we have only to plead the magnitude of our subject as our excuse for having so far exceeded the limits usually assigned to the length of an official Report.

- (Sd.) F. ANDERSON, M. D., *President,*
Deputy Inspector-General.
 „ C. PALMER, M. D.,
Presidency Surgeon.
 „ J. ELLIOT, M. D.,
Civil Assistant Surgeon.
 „ D. J. MCNEILE.
 „ DEGUMBER MITTER.

APPENDIX I.

Statement furnished by BABU DEGUMBER MITTER relative to the epidemic fever at Cossim Bazar and the neighbouring Villages.

* * * * *

CHOWKHALLY, Bhautpara, Cossim Bazar, Kalkapore, Bamunghatta, and Fureshdanga were situated on a curve of the River Hooghly until a straight cut was made some sixty years since forming the chord of the curve, thus changing the course of the river and throwing those places inland. This engineering operation was closely followed by the breaking out of an epidemic in all those places which, in its virulence and mortality, is unparalleled by any pestilential visitation in Bengal, saving perhaps that which depopulated Gour.* During its rage cremation or burial in due form was found impracticable, and the dead are said to have been carried in cartloads to be disposed of any how; and thus the City of Cossim Bazar, once noted for its commercial importance, the extent and magnitude of which is said to have called into existence upwards of a hundred shroffs or banking firms to meet the monetary requirements of the same, was

* It is highly probable that the long continued pestilence which necessitated the removal of the seat of Government from Gour to Tanra was caused by interruption in the drainage of the city. The heavy embankment on the margin of the lake or bheel on its eastern extremity, while guarding the city from inundation, must have effectually shut out the drainage in its flow into the lake.

reduced, within the short space of five years, to almost a deserted waste.

This fever continues there to the present time, shewing that its causes are still in active operation. In other respects Cossim Bazar does not at all differ from any healthy Town in Bengal. Its waters, vegetation, houses, and the mode of life of its inhabitants are exactly alike ; but no man sojourning there even for a day can help being struck with the extreme dampness which is felt even during the hottest months of the year. This dampness can only arise from excessive moisture in the sub-soil, owing to the disturbance in the drainage of the place, occasioned, most probably, by the diversion in the course of the river, aided perhaps by a number of roads running transversely to the direction of the drainage. How caused it is not easy at this distance of time correctly to trace, and perhaps immaterial to our present enquiry. Enough that the place is extremely damp. This is undeniable, and I think it is likewise undeniable that this extreme dampness is owing to an excess of moisture in the soil.

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APPENDIX II.

Memorandum supplied by BABU DEGUMBER MITTER relative to certain obstructions to the drainage of the epidemic Districts.

THE drainage of all the villages in the epidemic Districts, as elsewhere in Lower Bengal, is effected by the water first running into the nearest *paddy fields* lying in the direction of their slope, thence it collects in the *bheels*, from which it rushes through *khals* into large streams, which again communicate with navigable rivers. An obstruction occurring in any one of these conduits must interfere with the drainage, and its effects are felt more or less according to the proximity or remoteness of the obstruction from the scene of its influence. Accordingly it has been found, as will be noticed more particularly hereafter, that the stoppage of the mouths of the different streams has not been productive of such serious consequences to the villages lying within their influence as when the same occurred more in the vicinity of those villages.

The obstructions appear to have arisen chiefly from roads and partly from embankments thrown up across khals for purposes of fisheries. I had neither time nor opportunities at command to trace in every instance how, and when, the stoppage had taken place, enough, however, has been discovered to satisfy me of the correctness of my general conclusions.

The banks of large rivers, as a rule, being always high, the slope of the villages situated on either side of the Hooghly runs inland. Accordingly the drainage of all the villages from Trebeni to Nasurye, as also of those lying more inland, at one time passed over the adjoining paddy fields to the west into the River Koontee through the Jhenook Khalee Khal. On either side of this khal are beds of sand of a superior quality, which is extensively used for building purposes. In the process of excavating this sand a large quantity of surface earth is thrown up and deposited close to the bed of the khal, and being gradually washed into it has caused some obstruction in that channel. The mouth of the Koontee again, called Nasurye Khal, has since several years considerably silted up, closing its navigation soon after the rains. These stoppages, though interfering to a certain extent with the drainage of the country, did not produce any serious consequences. About five years since, however, a road was run by Babu Mudusoodun Nundy (unprovided with a single bridge) from Mugra to Nasurye, crossing the water-course and thereby completely intercepting the drainage of all the villages noticed above in its flow into the Koontee. This resulted in the breaking out of the epidemic a year or two after almost simultaneously in all those villages. In the same manner Joypore, Bagaty, and the other adjacent villages were attacked; soon after the village road from Trebeni to Mugra was raised and metalled without any outlet being kept across it, thus stopping the drainage of those places, which, when the road was kutcha and on a level with the country, flowed over it into the Koontee.

A road from Rajhat to Dwarbashini crossing a bheel, where the drainage of the latter place used to collect, has stopped its passage into the Kadermuttee. There is an apology for a bridge constructed, the ryots said, about two years since, but I was satisfied by personal observation that it was quite insufficient to afford free passage to the drainage of the place, as large collec-

tions of water in the bheel itself at a time of the year when even large tanks begin to dry up otherwise fully proved. The result is that a violent epidemic has been raging in Dwarbashini since August last. Again, the Unjona, which was at one time a navigable stream during the rains, carrying in its fall into the Matabhanga the drainage of a number of villages in the vicinity of Kishnaghur, has silted up at both the ends since fourteen years, yet none of the villages of which it was the main sewer suffered therefrom. A kutchra road, however, running from the Barrobazar of Kishnaghur to Lollbagaun, crossing the water-courses of Baroepara, has been raised within the last two or three years, completely intercepting the drainage of that village, which had hitherto flowed over it into the paddy fields; and it has been followed by the breaking out of a fearful epidemic in Baroepara since August last.

In like manner the Eastern Railway and its feeders, when the same have crossed the water-courses of villages lying on the eastern bank of the River Hooghly, and of others more inland, but situated to the west of the line, have obstructed the drainage of those places; the fall of the villages lying on the eastern bank of the Hooghly, as I have before observed, being towards the east, and consequently Chogda, Kanchraparah, Halisuhur, and many others similarly situated have suffered.

I may here remark that the face of the country being perfectly flat, the drainage runs over the whole surface towards the direction of its slope, and consequently roads running transversely to it must of necessity intercept the drainage. Both the East Indian and the Eastern Railways are provided with capacious viaducts whenever they have crossed what appeared to the eye as watercourses; but these are in reality khals and other large streams, which, as I have already observed, received the drainage in its flow from the villages over *paddy fields* and *bheels*. The latter exhibit no visible signs of their being waterways, and could not be known as such unless narrowly watched during the rains, though a road crossing them would more effectually shut out the drainage, and the evil consequences resulting therefrom would be much sooner felt than when it crossed distant channels. Taking into consideration the number of roads which have sprung up of late, as also others in course of construction, and

bearing in mind likewise the manner in which the drainage of the country is effected, and the difficulty thereby entailed of providing those roads with a sufficient number of outlets, it is not improbable that in the cases of those villages which have not yet been examined, obstructions to their drainage would upon enquiry, appear to have proceeded chiefly from roads having been made without reference to the country, and without being provided with a sufficient number of water-courses.

PLINY ON WINE.

[In our number for October 1868 we gave expression to our views on alcohol as a beverage, and we have since that time seen no reason to change our mind. We said—"to prove that alcoholic drinks are a necessity, it must be shown that they are not only food but better and cheaper food than what the working man can procure. It is notorious, neither of these points are tenable. Alcohol is a very poor substitute for food. In fact, *it is not food properly so called*. It serves the purpose of food only indirectly, in so far as it arrests or delays the metamorphosis of tissue, and assists in the assimilation of food." * * As for the influence of alcohol over the digestive function, it must be admitted from its known property of coagulating albumen, that whereas this must be confined to the assimilation of the saccharine or fatty, it must prove positively obstructive, to that of the nitrogenous substances. Hence alcohol must be a disturber of normal digestion. Does alcohol enable men to endure fatigue of body and mind, and low temperature, for any great length of time? The testimony of genuine workers, of travellers, especially arctic travellers, is strongly opposed to this view."

It is no small satisfaction to find these views, expressed so long ago as 1868, corroborated by those expressed by so great an authority as Dr. Richardson in 1875. "This chemical substance, alcohol," says he, "an artificial product devised by man for his purposes, and in many things that lie outside his organism a useful substance, *is neither a food nor a drink suitable for his natural demands*. Its application as an agent that shall enter the living organisation is properly limited by the learning and skill possessed by the physician, a learning that itself admits of being recast and revised in many important details, and perhaps in principles.

"If this agent do really for the moment cheer the weary, and impart a flush of transient pleasure to the unwearied who crave for mirth, its influence (doubtful even in these modest and moderate degrees) is an infinitesimal advantage, by the side of an infinity of evil for which there is no compensation, and no human cure."

We are not confident if the time will ever come when alcohol will take to its proper level as a chemical substance, and as a

medicine to be used only at the discretion of the physician. It is nevertheless our duty to enlighten the community of its real nature by the demonstrations of science, as well as by testimony ancient and modern. Of ancient testimony to its evils when abused as a drink we have an exhaustive resume in the "History of the World, commonly called the Natural History of Plinius Secundus." These evil effects are depicted with a master hand, and with such fidelity that we might take the description as if it were a modern exposition. All these considerations have induced us to lay before our readers, *verbatim et literatim*, those Chapters in the "Natural History" (Dr. Philemon Holland's Translation, 1634) which treat of wine, and we trust they will be found both interesting and instructive.—EDITOR, *Cal. J. Med.*]

CHAP. V.

¶ *Of the Nature of Wine*

The nature and property of wine, is to heat the bowels within, if it be drunke; and to coole the exterior parts, if it be applied outwardly. And here it shall not be amisse to rehearse in this very place, that which *Androcydes* (the noble, sage, and wise Philosopher) wrote unto *K. Alexander the Great*, for to correct and reforme his intemperate drinking of wine, whereto he was very prone and ouermuch giuen. *My good Lord* (saith he) *remember when you take your wine, that you drinke the very bloud of the earth: Hemlock (you know sir) is poison to man, euen so is wine to Hemlock.* Now if that Prince had bin so wise as to haue obeied these precepts of his, certes, he could neuer haue killed his best friends as he did, in his fits of drunkennesse. In sum, this may be truely said of wine, that being taken soberly and in measure, nothing is more profitable to the strength of the body; contrariwise, there is not a thing more dangerous and pernicious, than the immediate drinking thereof.

CHAP. VI.

¶ *Of kindly wines made of the best Grapes.*

Who doubteth, that some Wines be made more pleasant and acceptable than others? nay out of the very same vat ye shall haue wines not alike in goodnesse, but that some go before their

brethren, pressed though they be at one time, and from the same kinde of grape : which may be long either of the vessell whereinto they be filled, or of some accidentall occasion: and therefore as touching the excellency of wine, let euery man be his own taster and judge. The Empresse *Iulia Augusta* would commonly say, That she was beholden to the Pucine wine for liuing as she did 82 yeares : for she neuer vsed to drink any other. This wine came of the grape that grew along the Adriaticke sea, or Venice gulfe, vpon a stony and raggie hill, not far from the source or spring of the riuier Timavus, nourished with the vapors breathed from the sea ; and many Amphores there were not drawne thereof at a vintage : and by the judgment of all men there is not a wine more medicinable than it is. I would thinke verily therefore, that the wine Pyctanon (which the Greekes so highly praise) is the very same ; for it commeth from the coasts of the Adriaticke sea. The Emperor *Augustus Cæsar* preferred the Setine wine before all others : and after him in manner, all the Emperors his successors, for the ordinary experience they found thereby, That lightly the liquor of that wine would not hinder digestion nor breed raw humors in the stomach : and this wine commeth of the grape about the towne Forum Apij. Before that time, the wine Cæcubum was in best account ; and the vines which yeclded it, grew to the Poplars in the marish grounds within the tract of Amyclæ. But now is that Wine clean gone, as well through the negligence of the paisants of that countrey, as the streights of the place : and so much the rather, by reason of the ditch or trench which *Nero* caused to be made nauigable, beginning at the lake or gulfe Baianus, and reaching as far as to Ostia. In the second degree of excellency, are ranged the wines of the Falerne territorie, and principally that which came from the vineyards Faustian : and this excellency it grew vnto by passing good order and carefull husbandry. Howbeit this wine also in these daies beginneth to grow out of name and request, whiles men love rather to haue plenty from their vines, than otherwise lay for the goodnesse thereof. Now these Falerne vineyards, begin at the Campaine bridge on the left hand as men go to the city colony erected by *Sylla*, and lately laid to Capua, & vnder the iurisdiction thereof. But the Faustian vineyards lie about 4 miles from a village neere Cedæ, which village is from

- Sinuessæ six miles distant. And to say a truth, this Faustian wine is inferiour to none in reputation : so piercing and quicke it is, that it will burne of a light flame ; a propertie that you shall not see in any other wine. Three sorts there be of these Falerne wines : the first be hard and harsh ; the second sweet and pleasant ; the third, thin and small. But some haue distinguished them in this wise : those that come from the top of the hills, be called Gaurane wines ; from the mids, Faustian ; and last of all from the bottom and foot thereof, the Falerne. But by the way this would not be forgotten, That the grapes whereof be made these wines so singular and excellent, are nothing pleasant to the tast for to be eaten. As touching the Albane wines from about Alba neere the city of Rome, they reach to the third ranke in goodnesse, for a certain varietie they haue in their tast : sweetish they be, and yet otherwhiles they haue an vnripe & harsh rellish of the wood, & tast like the hedge-wine. In like maner the wines of Surrentum, & namely those of grapes growing only in vineyards, are excellent good for weak persons that be newly recouered of sicknesse ; so small they are, and wholesome withal. And in truth, *Tyberius Cæsar* was wont to say, That the Physicians had laid their heads together, and agreed to giue the Surrentine wine so great a name ; for otherwise it was no better than a very mild and pleasant vineger : and *C. Caligula* (his successor in the Empire) vsed to say of it, That for a wine that had lost the heart and was a going, it was very good. The Massike wines, which come from the Gaurane hills looking toward Puteoli and Bajæ, come nothing behind the rest, but strue to match them euery way. For as touching the Statane vineyards, that confine and border vpon the Falerne, their wines doubtlesse are now come to be the principall and chiefe of all the rest : whereby it is euidently seen, that euery territory and vine-plot hath their times and seasons, like as all other things in the world, one while rise and another while fall. For in times past the Calene wines made of the grapes growing hard by Rome, were wont to go before all others : as also the Fundane vines had their time, as well those that are planted in vineyards, as they which runne vpon trees : like as those of the other side, neere also to the city of Rome, & namely from Veliternum and Priuernum. For as touching the wine of Signia, it is held for a medicine only ;

and by reason of an astringent verdure that it hath, it is excellent good to stay the flux of the belly. In the fourth place of this race of vines, *Iulius Caesar* (late Emperor of famous memory) hath raunged, (for to serue the publick and solemne feasts of the city) the Mamertine wines, from about Messana in Sicily: for he was the first (as appears by his letters missiue) that gaue credit and authority vnto them. And of those, the Potulane wines (so called of them who first planted the vines whereof they came) are most commended, and namely those that are vpon the next coast of Italy. Within the same Sicily, the Taurominitane vines are highly esteemed, insomuch, as many times they go for Messana wine, and are so sold by whole pottles. Now for all other wines from about the coast of the Tuscan sea Northward, good reckoning is made of the Prætutian and such as come from Ancone: also of the Palmesian wines, which haply tooke that name, for that the first plant of that vine came from a palme or Date tree. But in the midland parts of Italie within the firme land, good regard there is of the Cesenatian and Mecænatian wines. Within the territory of Verona, the Rhetian wine carrieth the price: which *Virgill* ranged next after the Falerne wines. Anon you come to the wines Adriane, and those that grow far within the tract of the Venice gulfe. Now from the nether sea about Lions, ye haue the Latiniensian, the Grauiscale, and the Statonian wines. Throughout all Tuscan, the wines about Luna beare the name: like as those of Genes, for Liguria. Betweene the Pyrenean hills and the Alpes, Massiles hath the commendation for wines of a double taste: for the vines there, do yeeld a certain thick and grosse wine, which they call Succosum, [*i.* full of juice and liquor] good to season other wines, and to giue them a prety tast. When ye are passed once into France or Gaule, the wine of Beterræ is in chiefe request. As for the rest within Languedoc and the Province of Narbon, I am not able to auouch any thing for certainty, such a brewing and sophistication of them they make, what with fuming, perfuming, and colouring them: and would God they put not in some herbes and drugs among, that be not good for mans body. For certaine it is that they commonly buy Aloe to giue the wine both another tast and also a counterfeit color. Moreouer in the farther and more remote coasts of Italy toward the Ausonian sea, there be wines which are not

without their praise and commendation, and namely those of Tarentum, Seruitium, and Consentia : likewise of Tempsa, Bauia, and Lucania : howbeit the Thurine wine goeth before them all. As for the wines of Lagaria, which be made of the grapes not farre from Grumentum, there goes a right great name of them, by reason that *Messala* used ordinarily to drink thereof, and thereby was supposed to preserue his health so well. Of late daies there be certaine wines in Campaine growne into credit (like as they haue gotten new names) by good ordering and husbandrie, or by chance, I know not whether ; namely, those of Tribellia foure miles from Naples, of Caulium neare to Capua : and last of all, the Trebulaine wines within their own territorie : for before time they were euer counted no better than common wines for euery man to drink, no more than the Trifolines, from whence they vaunt of their descent. As for the wine of Pompeij, a towne in the kingdome or Naples, neither it nor the vine wherof it commeth, will last aboue ten yeres at the most : after which tearme, the elder they both be, the worse they are. Besides, they are found by experience to cause the headach, insomuch, as if a man drinke thereof ouer night, he shall be sure not to haue his head in good tune vntill noone the morrow after. By which examples aboue rehearsed, it is plaine in my conceit, that the goodnesse of the wine standeth much vpon the soile and climate, and not in the grape : so as a needlesse and endlesse matter it is to reduce all kind of wines to a certaine number, considering that one and the selfe same Vine planted in diuerse places, hath sundrie operations, and maketh varietie of wines. Now as concerning the wines of Spaine, the Laletane vineyards are much spoken of for the plentie and abundance of wine that they yeeld : but those of Tarracon, Arragon, and Laurone, are much praised and renowned for the fine and neat wines which they make. As for the wines that come out of Islands, and namely, the Baleares, they are comparable to the very best in Italie.

I am not ignorant, that most men who shall read this Treatise will thinke that I haue omitted and ouerpasse many wines : for euery man likes his own ; and as ones fancie leadeth, so goes the voice and the cry, and there runs the Hare away. It is reported, that one of *Augustus Cæsars* freed men (reputed for the finest taster that he had about his court, and who knew best what would con-

tent his pallat, and please his tooth) vpon a time when he tasted the wine that was for the Emperors bourd, at what time as he made a feast, said to one of the guests at the table, That the said new wine indeed had a new and strange tast, and was none of the best, and those that were in name, howbeit (quoth he) this is for the Emperors cup, and willingly wil he drink of no other, notwithstanding it be but a homely wine made hereby in the countrey, and not far fetched. And now for a finall conclusion of this matter, I cannot denie but that there bee other wines which deserue to be numbered among those that are right good and commendable, howbeit, suffice it shall to haue written of these, which by the common opinion and consent of the world are held for the better.

CHAP. VII.

¶ *Of Wines beyond sea.*

It remaineth now to speake of outlandish Wines beyond the sea. First and formost therefore next to those wines renowned by the Poet *Homer*, and whereof we haue written before, best esteemed alwaies were the wines of the Islands Thasos and Chios : and namely that of Chios which they call Arusium or Aruisium. *Erasistratus* the most famous Physician of his time, matched with these the Lesbian wine ; and his authoritie gaue credite vnto it : and this was much about the six hundred yeare after the foundation of Rome. But in these daies there is no wine to that of Clazomene, euer since that they began to put thereto lesse sea-water for to season it, than their custome was. As for the wine of Lesbos, it hath a sent and relish of the salt water naturally of it selfe. Neither is the wine that comes from the hil Tmolus in any regard, as a wine to be drunke alone, but it serues as a sweet cuit to mingle with other wines that be hard : for thereby their greene verdure wil seeme more mild and pleasant, yea, and withall to haue their ripe age : for no sooner is it tempered threewith, but they tast presently elder than they be. Next to these in goodnesse, follow in their course the wines of Sycione, Cypres, Telmessus, Tripolis, Berytus, Tyrus, and Sebennys. As for this wine last rehearsed, it is made in Ægypt, a countrey much renowned for three kinds of grapes there, to wit, Thasia, Æthalos, and Peuce. Next in price & account be these following, the Hippodomantian, the

Mystick, Cantharite, & the Gnidian wine of the first runging and vnpressed, also that of Catacecaumene, a region so called, for that it seemeth all burnt; of Petra, and Mycone. As for the wine Mesogites, it is knowne to make headach: neither is the wine of Ephesus wholesome and healthfull, because it is sophisticat-ed with a kind of cuit half sodden, called Defrutum, and sea-water. As for the wine of Apamea, by report it comes very neare to a kind of Mede, and will very well agree with all, like as Prætutium in Italy. For otherwise, this is the property in generall of al sweet wines, that they will not well sort together, & be good still. Touching the wine Protagium, it is now grown out of remembrance: and yet the Physicians of *Asclepiades* his sect and school, gaue praise vnto it next the Italian wines. The learned Physician *Apollodorus*, in his treatise that he compiled of good wines, which he recommended vnto King *Ptolomaus* for to drinke, as meet for the health of his person, (for default of Italian wines then vnknown) highly praised the wines in Pontus, & principally that which is called Naspercenites: next to it the Orœotik, the Oencates, that of Leucadia, of Ambracia; and (which he preferreth aboue all the rest) the wine of Pearethus: and yet he said, that there went the lesse name and opinion of it, because after sixe yeares it loseth the strength and pleasant tast that it had.

• CHAP. VIII.

¶ *Seven kinds of salt wine.*

Thus far forth haue we discoursed of the very floure of good wines, according to the regions where naturally they come of the grape. Now are we to treat of wines compounded. And first, among such wines is that, which they call Bixion (an invention of the Greeks) which aboue all others is most esteemed: and great reason, for deuised it was for the cure of many maladies, as we shall shew hereafter in our treatise of Physick. The making whereof is in this manner: Take grapes gathered somewhat before they be ripe: let them lie to drie and parch in the hot Sunne for thre daies, and be turned duly thrice a day: vpon the fourth day presse them forth for wine, put the liquor vp in barreles, and so let it worke in the Sun. Howbeit, hereto they put a good quantity of salt sea-water. But this deuise was learned first of

a false theeuish knaue who hauing robbed his maister and drunk vp a good deale of his wine, filled vp the vessel again and made just measure with sea-water. White wine if it be ordered in this sort, is called Leucochrom by the Greekes: but in other nations the like wine so made is named Tethalassomenon. As for Thalassites, it is a kind of wine so called, for the vessels when the wine is new tunned, be cast into the sea, and there let to remaine for a time, by which means the wine will soon seeme old and readie to be drunke. Furthermore, *Cato* also here among vs hath shewed the way how to make the Greekish Wine Coum, of our owne Italian Wine: but aboue all he hath set down an expresse rule, to let it first take the maturitie and perfection 4 yeres in the Sun. As for the wine of Rhodes, it is much like to that of Coos, But the Phorinean wine is more salt than the wine of the Isle Coos. Finally, all transmarine or beyond-sea wines are thought in seuen or six yeares at the least, to come vnto their middle age.

CHAP. IX.

¶ *Fourteene sorts of sweet wines.*

ALwaies the sweeter that they be in tast, the lesse fragrant & odoriferous they be: the thinner and smaller that they be, the more euer they smell to the nose. Of wines there be four principall colours, white, yellow, red, and blacke. As for *Pythium* and *Melampsythium*, they be certaine kinds of cuit, hauing a seuerall tast apart by themselues, not resembling wine indeed. And for *Cicibelites* made in *Galatia*, it tastes alwaies like new wine: so doth *Halyntium* in *Sicily*. For as touching *Syræum*, which some call *Hepsema*, & we in *Latine* *Sapa* [*i. Cuit*] it is a meer artificiall thing, the deuise of mans wit, and no worke of Nature: namely, when new wine is sodden away a third part: for when it boiles to the halfe, we then call it *Defrutum*. And in very deed, all these be inuentions to sophisticate and counterfeit honie. But those before named retaine the naturall tast of the grape and the soile whereof they doe consist. Next to these cuit-wines of *Candie*; those of *Cilicia*, *Affrick*, *Italy*, and the prouinces confronting thereupon, are held for the best. Certain it is, That they be made of one grape, which the Greekes call *Stica*, and we *Apian* [*i. the Muscadell*] and of another named *Scirpula*: the

which haue been suffered a long time to hang in the Sunne ypon the Vine vntill they be scorched and parched : or else ouer the vapor of scalding oile. Some there be that make them of any sweet grapes whatsoeuer, so that they be let to concoct before in the Sun, vntil they be white and drie, so farre forth, as little lesse than half of their weight be consumed : which done, they stamp them and so gently presse them. Then looke how much liquor they haue pressed forth, so much pit water they put to the cake that is pressed, that thereof they may haue a cuit of a second running. But they that be more curious & take vpon them to make a daintier cuit, dry the grapes in maner aforesaid, but they take forth the stones and graines within : they strip them also from the steeles and tailes that they hung by : and so after they be well drenched and infused in some excellent wine vntill they be swelled and plumpe, they presse them. And certainly this fashion is simply the best of all others. Put to the cake thereof, water as before, and after the same manner ye shall haue a cuit of a second sort. Now there is a kind of wine which the Greeks call Aigleuces, that is to say, always sweet like new wine, of a middle nature between the common simple wine and the sweet : and this commeth not vnto it by kind, but by heed taken in the boiling ; for it is not suffered to seeth and work : and this is the term, whereby is signified the alteration of new Must into wine. To hinder therefore that it work not, (as naturally it will) they haue no sooner tunned or filled it out of the Vat, but immediately they dousse the vessels full of new Must in the water, and let them there continue till mid-December be past, and that the weather be settled to frost and cold, and likewise the time expired of the working within the said vessells. Moreouer, there is another kind of wine naturally sweet, which in Prouance and Languedoc is called Dulce [*i. sweet*] & namely, in the territorie of the Vocontains. For this purpose they let the grapes hang a long while vpon the Vine, but first they wryth the steele that the bunch hangs to. Some make incision into the very Vine branch, as far as to the pith and marrow within (to diuert the moisture that feeds the grape :) others lay the clusters a drying vpon tile-houses : and all this is done with the grapes of the Vine Heluenaca. There be that range in a ranke of these sweet wines, that which they cal Diacyton. For which effect, they drie the

grapes against the Sun (howbeit in a place well enclosed) for 7 daies together, vpon hardles, 7 foot likewise from the ground : in the night season they saue them from all dewes, and so on the eight day they tread them in the wine presse : and thus they draw forth a wine of an excellent sauor and tast both. A kind of these sweet wines, is that which they name Melitites, [in manner of a Braget, Meade, or Metheglin.] Howbeit, different it is from the mead or honied wine which the Latines call Mulsum, made of old wine that is hard, and a little honie : whereas the foresaid Melitites consists of 5 gallons of new tart wine still in the verdure, whereto is added one gallon of honie, and a * cyath of salt, and so boiled all together. But I must not forget to place among these sundry kinds of drinke, the liquor Protropum, for so some call new wine running it self from the grapes, before they be troden and pressed. But to haue this good, and so to serue the turne, so soon as it is put up into proper vessels for the purpose, it must be suffered to work : and afterwards to reboile and work againe for fortie daies space the Summer following, euen from the very beginning of the dog daies, and so forwards.

CHAP. X.

¶ *Of weake and second wines, three kinds.*

The second wines, which the Greeks call Deuteria, (*Cato* and we Romans name *Lora*) cannot properly and truly be called Wines, being made of the skins and seeds of grapes steeped in water : howbeit, reckoned they are among course household wines for the hines and meinie to drinke. And three kinds there be of them. For sometime to the tenth part of the new wine that hath beene pressed out, they put the like quantity of water, and suffer the foresaid refuse of the grapes to soke therein a day and a night : which done, they presse it forth againe. A second sort there is, which the Greeks were wont to make in this manner : They take a third part of water in proportion of the wine that was pressed forth, and after a second pressing, they seeth it to the wasting of the third part. The third is that which is pressed out of the wine lees, and this *Cato* calls *Phœcatum* [*i.* Wine of

lees.] But none of these wines or drinks will endure above one yeare.

CHAP. XI.

¶ *What neat wines began of late to be in request in Italie.*

In this treatise of wines I cannot omit this obseruation : That whereas all the good wines, properly so called and known in the whole world, may be reduced in fourscore kinds or therabouts : two parts of three in this number, may well be counted wines of Italie : which in this regard farre surpasseth all other nations. And hereupon ariseth another thing more deeply to be noted, That these good wines were not so rife nor in such credit from the beginning, as now they be.

CHAP. XII.

¶ *Observations touching wine.*

To say a truth, Wines began to grow in reputation at Rome, about sixe hundred yeares after the foundation thereof, and not before. For king *Romulus* vsed milk when he sacrificed to the gods, and not wines : as may appeare by the cerimonial constitutions by him ordained, as touching religiou ; which euen at this day be in force, and are obserued. And king *Numa* his successor made this law *Posthumia* in his later daies, *Let no man besprinckle the funerall fire with wine.* Which edict no man doubteth but he published and enacted in regard of the great want and scarcitie of wine in those daies. Also by the same Act. he expressly did prohibite to offer in sacrifice to the gods, any wine coming of a Vine plant that had not beene cut and pruned : intending by this deuise and pretence of religion, to enforce men to prune their Vines, who otherwise would set their minds on husbandrie only and plowing ground for corne, and be slow enough in hazarding themselves for to climbe trees, whereunto Vines were planted. *M. Varro* writeth, That *Mezentius* the king of Tuscanes aided the Rutilians of Ardea in their warres against the Latines, for no other hire and wage but the wine and the vines which then were in the territorie of Latium.

CHAP. XIII.

¶ *Of the ancient vsage of wine: and the wines in oldtime.*

In ancient time, women at Rome were not permitted to drink any wine. We read morcouer in the Chronicles, That *Egnatius Mecennius* killed his owne wife with a cudgell, for that hee tooke her drinking wine out of a tun; and yet he was cleared by *Romulus*, and acquit of the murder. *Fabius Pictor* in his *Annales* reports, That a certaine Romane dame, a woman of good worship, was by her owne kinsfolke famished and pined to death, for opening a cupbord, wherein the keis of the wine-sellar lay. And *Cato* doth record, that hereupon arose the manner and custome, That kinsfolke should kisse women when they met them, to know by their breath whether they smelled of Temetum: for so they vsed in those daies to tearme Wine: and thereof drunkennesse was called in Latine Temulentia. *Cn. Domitius* (a iudge in Rome) in the like case pronounced sentence judicially against a woman defendant, in this form, *That it seemed she had drunke more wine without her husbands knowledge, than was needfull for the preseruacion of her health*, and therefore afterward definitiue, That she should lose the benefit of her dowrie. Certes, the Romanes for a long time made great spare of wine. *L. Papyrius* lord Generall of the Romane armie, when he was at the point to joyne battell with the Samnites, made no other vow, but this, That he would offer vnto *Iupiter* a little cup or goblet of wine, in case he atchieued the victorie and woon the field.ouer and - besides, we find in histories, that among donatiues and presents, certaine sextars or quarts of milke haue beene many times giuen, but neuer any of wine. The same *Cato* abouenamed, after his voiage into Spain (from whence he rcturned with a notable victorie, and in a triumphant manner) in a solemne speech that hee made vnto the people, protested in these words and said, *No other wine I haue drunke since I went, than the very marriners haue*. How farre vnlike was he to men in these daies, who sitting at the table, haue their cup of strong wine by themselves, and giue vnto their guests, for the most part, other small wines to drinke: or if they suffer them to drinke all one and of the best at the beginning of the feast, they will be sure to change and to seruē them with worse soon after. In old time, the best wines vsed at feasts were aromatised and

spiced with sweet Myrrh, as appeares in the Comedie of *Plautus*, entituled *Persa*. And yet it should seeme there, that sweet Calamus was to be added besides. And hereupon it commeth, that some haue thought, how our forefathers in times past tooke most delight in such spiced cups and Ippocras wines. But *Fabius Dorsenus* the Poet sufficiently declareth and decideth this point in these verses, when he saith,

Mittebam vinum pulchrum, Murrhinum.

I sent neat wine,
Which hight Myrrhine.

And againe in his Comedie *Acharistio* :

Panem & Polentam, vinum Murrhinam.

Both bread and grewell I did present,
And Myrrhine wine of pleasant sent.

I see moreouer, that *Scævola Lælius*, and *Atteius Capito* were of the same mind. For in the Comedie of *Plautus* entituled *Pseudolus*, thus it is written :

*Quod si opus est ut dulce promat
Indidem, ecquid habet ? (Char.) Rogas ?
Murrhinam, passum, Defrutum, mella.*

• Of dulcet wine if there be need,
What hope is there from thence to speed ?

• *Char.* Why ask you that ? he furnished is
With Murrhin, Cuits, and Meade ywis.

By which a man may see evidently, that Murrhina was not onely counted a wine, but reckoned also among the sweet and delicate wines.

CHAP. XIV.

¶ *Of wine store-houses : and of Opimian wine.*

That there were wine sellars at Rome, and that they vsed there to tun vp Wine in the 633 yeare after the foundation thereof appeareth plaine by a good prooffe of the Opimian wine : and euen in those daies Italie knew her owne good, and what it was to maintaine vineyards. Howbeit, as yet were not those wines in credit, which now are so rife and in so great account. And therefore it is, that all the wines of that time bear the only name

of that one Consul, and be called Opimian. And thus afterwards also in processe of time, the wines that came from beyond the seas for a long space, were in much request, euen vntil our grandfathers daies : yea, and after that, the Falern wines were in name and called for, as may appeare by that Verse of the Comickall Poet ;

Quinque Thasij vini inde depromam, Falerni bina.

To measures five of Thacian wine,
I will draw twain of Falerne fine.

In the 675 yeare after the foundation of Rome, *Pub. Licinius Crassus*, and *L. Iulius Cæsar*, Censors for the time being, published an Edict, and proclaimed, *That no man should sell any Greek wine, or Aminean, but after eight Asses the Amphor or Quadrantum.* For these be the verie expresse words of the said Edict. Now was Greeke Wine of so great price and estimation, that a man was but allowed one draught thereof at a meale, were the cheare neuer so great, and the feast right sumptuous. But what wines were in request ordinarily at the boord, *M. Varro* doth shew in these words : *L. Lucullus* (quoth hee) while he was a boy, neuer saw at his fathers bord Greeke wine serued vp but once at a meale, how good soeuer the fare was otherwise. Howbeit, himselfe when he returned out of Asia, in a congiarie or largesse that he gaue vnto the people, made a dole and distribution of more than an hundred thousand measures of gallons apiece. *C. Sentius* whom of late daies we saw Pretor of Rome, testified, that he neuer saw any wine of Chios brought into his house, before the Physition prescribed and set it down for the *Cardiaca passio*, or the trembling of the heart, whereto he was subiect. But contrariwise *Hortensius* when hee died left aboue ten thousand barrells full of that Wine vnto his heire. And thus much out of *M. Varro*.

CHAP. XV.

¶ Of Cæsars bountie and liberalitie in Wine.

Bvt what should we say of *C. Iulius Cæsar* Dictator ? In that solemne feast of his which hee made at his triumph, did not he distribute among his guests Falerne wines by whole barrells, and Greek wine of Chios by the rundlets ? After his returne out of Spain with victorie and triumph, he likewise gaue away a largesse of wine as well Chian as Falern. But at the royall dinner which

he made when he entred vpon his third Consulship, he caused all the Hall to be serued thorowout with Falern, Chian, Lesbian, and Mamertine wines: which was the first time that euer any man saw the seruice of 4 seuerall wines at one feast. Now in farther process of time, and namely about 700 yeares after Rome cities foundation, all other Wines began to beare a name and come in request.

CHAP. XVI.

¶ *Of Artificiall or made Wines.*

Considering all that hath bin written, I nothing maruel at such an infinite number of compound and artificiall wines deuised in old time, all for the use of Physick, whereof we will now treat in more ample maner. To begin therefore with wine Verjuice, called Omphacium, how it should be made, for perfumes and odoriferous ointments, we haue shewed in the former booke. As for the wine named Oenanthinum, it is made of Labrusca, that is to say, the wild Vine, in this wise: Take two pound of the floures of the wild vine aforesaid, let the same be steeped in a measure of new wine containing about 12 * gallons, for the space of 30 daies, and then be changed out of that vessell into another. Moreover, the root and grapes of the sayd wild vine are good for curriers to dresse their leather. The same grapes a little after they haue done blooming are taken to be a singular remedie for to coole those that be troubled with hot and ardent diseases, for naturally they be, as men thinke, exceeding cold: and indeed many of these grapes die in the hot time of Summer before the rest which are called Solstitiales: but all of them neuer come to full and perfect ripenesse. Now if you would keep Pullein from pecking grapes, take these of the wild Vine before they be thoroughly ripe, mingle and seeth them with their meat: for this will take away all their appetite that way, and breed a loathing after all grapes.

To come now vnto the artificiall wines before named: the first of them, namely that which they call Adynamon [*i.* without strength] is made of very wine in this sort: Take of new white wine 20 Sextars [*i.* quarts:] of water halfe as much: let them

boile together vntill the measure of water before said be consumed. Some take of sea water ten Sextares, of raine water as much : and when they be mingled together, suffer them to worke in the hot Sun for the space of fortie daies. This drinke they vse to giue vnto patients, for such maladies as they feare wine would be hurtfull to. A second made wine there is called Millet Wine, after this sort : Take of Millet seed that is ripe, huske, head, and all, a pound and a quarter, put into two gallons of Must, or new wine : after that it hath lien there infused seuen moneths, let the liquor run from it into another vessell, and keepe it for your vse. As touching the wines of Lotus, as well the tree and shrub, as the herbe, we haue shewed sufficiently how they ought to be made. Moreouer, there be many wines made of sundry fruits, which we will write of hereafter more at large : with a supplement and addition of such interpretations only as be necessarie. And in the first place commeth the date wine, which the Parthians, Indians, and all the Nations of the East in generall do ordinarily vse. A Modius or pecke of ripe and sweet dates, which they call Chidææ, they let lie to steep in 3 gallons of water, and so presse for a liquor for the Date wine. Also the Fig-wine Sycites, of the fig which some cal Palmiprimum (as a man would say, Dates fellows, or next to Dates) others Catorchites, is made after the same fashion. But if a man list not to haue it so sweet, instead of water they vse to put so much of the stones, skins, & seeds of grapes. Of the Figs, of Cypres there is an excellent Vinegre made, yea and a better than it of the Alexandrine Figs, to wit, growing vpon the Sycomore. Likewise a wine is made of the fruit in Syria called Siliquæ ; as also of peares and all kind of apples. As for the wine of Pomegranates, the Greeks name it Rhoites : besides the fruit of the Corneil or wild Cherry tree, Medlars, Seruices, dry Mulberries, and Pine-nuts, doe yeeld seuerall sorts of wine. As for those pine nuts, they must lie steeped in new wines, before the wine be pressed out of them. The rest all be pleasant enough of themselves, and will serue alone for to make wines. The maner of making Myrtle wine, according to the receit and prescription of *Cato*, we will declare soon hereafter. For the Greekes haue another way of their owne, to wit, when they haue sodden in white Must or new wine the tender branches of the Myrtle, together with the leaues, and

then stamped the same, they put a pound thereof in three gallons more of Must, and cause it to boile yntill such time as a third part of the wine be consumed. Now that which is made after the same maner of the wild Myrtle berries, they call Myrtidanum; and this will colour and staine ones hands blacke.

Furthermore, the herbs of the garden do afford vs many wines, namely Radish, Sperage, Savory, & Majoran, Origan, Smallach seed, Southernwood, wild Mints, Rue, Nep, or Calamint, running Thyme, or Horchound. To make these wines, take of the herbes abovesaid two handfulls, and when they be stamped, put them into a little barrell of new Wine, containing twelue or thirteen gallons, together with a wine quart of Cuit sodden to the thirds, and a pint of sea-water. But for the wine of Naveus, you must take cleuen drams of them, two quarts of new wine, and so put them together in maner aforesaid. In like sort also the wine Squilliticum is made of the root of Scilla, or the sea Onion.

To proceed vnto wine made of floures, you haue first and foremost wine Rosat, after this manner: Take the weight of 40 deniers [*i.* five ounces] of Rose leanes well stamped, put them into a linnen cloth, together with a little weight, that they may settle downward, & not flote aloft; let them hang thus in 20 Sextars [*i.* three gallons] and two wine quarts of Must; keep the vessell close stopp'd in any case for 3 moneths, then open it and strain the said floures vnto the liquor. In like maner is there a wine made of the Celtick Spikenard, as also of the Nard sauage. I find also, that they vse to make a kind of spiced wine or Ipocras, not for sweet perfumes and ointments only, but also for to drinke. At first (as I haue shewed) they made these aromaticall wines with myrrh only, but soone after they added thereto Nard Celticke, sweet Calamus, and Aspalathus, either slicing these drugs, or putting them by gobbets into new Must or some dulcet wine. Some aromatise their wine with Calamus, Squinanth, Costus, Spikenard, Amomum, Casia, Cinamon, Saffron, Dates, and Azara bacca, put thereto in like maner by gobbets. Others take Spikenard and Malabathrum, of each halfe a pound to two gallons of new wine. Much after the same maner we spice our wines now a daies also, but that we adde pepper and hony thereto: which some call Condite, others Pepper wines.

Moreouer, there is deuised a Wine called Nectarites, made of Elecampane, named by some Helenium, of others Medica, Symphyton, Idæa, Orestion : and there be also that term this herb Nectarea. Now the order of it is, to take of the root forty drams, to fix Sextars of Must or new wine, and hang it in a cloth together with a weight in maner aboue said. Moreouer, there be wines made of other herbs, to wit, of wormwood, in this sort : Take of Ponticke Wormwood one pound, seeth it in forty Sextars [about six gallons and a halfe] of new Wine, vntill a third part be consumed : or without boiling, put certain handfulls or bunches thereof into a vessell of Wine, and so let it lie infused. After the same sort is Hyssop wine made, to wit of three ounces (which is a quarter of a pound) of Cilician Hyssope cast whole as it is into two gallons of Must, and so let them worke together : or else stampe the Hyssop, and so put it into wine. But both these wines are made another maner of way, namely by sowing or setting wormwood & Hyssop at the very root of the Vine-plant : for so *Cato* teacheth vs to make Elleborewine, of blacke Ellebore or Beare-foot growing at the Vine root. And in like maner also is made the Scammonite wine. A wonderfull nature and propertie these vines haue, to draw and sucke into them the very taste of the herbs and plants that are set neere vnto them : for enen so all the grapes about Padua haue a rellish of the Willows and Osiers that grow there in the marish grounds. Thus the men of Thasos do plant and sow either Ellebore, or wild Cucumber or else Scammonea, about their Vines, to make thereof their diuellish wine Pthorium, so called, because it causes a sleep, and procures vntimely birth. Of more herbs besides there be other wines made the vertues of which herbs we will set downe elsewhere in place convenient : and namely of Stæchos, the root of Gentian, of Tragoriganum, of Dictamum, Asarabacca, of Daucus, or yellow Carot, Sauge, Panace, Acorus, or Galangal, Conyza, or Cunilago, Thyme, Mandragoras, and Squinanth, more such wines there were yet, which the Greeks called Scyzinum, Itæomelis, and Lectispagites ; but as they be growne now out of vse, so the maner of making is vnknown.

As touching wines made of trees & shrubs, their maner was to seeth the berries of the green wood of both the Cedars, the Cypres, the Bay, Iuniper, Terebinth, Pine, Calamus, and Lentisk,

in new wine. In like maner, the very substance of Chamelææ, Chamæpithys, and Germänder. Last of all, the floures also of the said plants serue to make wines, namely by putting into a gallon of new wine in the vat, the weight of ten deniers or drams of the floures.

CHAP. XVII.

¶ *Of Hydromel and oxymel, [i. Honied water, and Honied vineger.]*

There is a wine called Hydromel, made of water and hony onely : but to haue it the better some do prescribe rain water, and the same kept five yeares for that purpose. Others who are more wise and skilfull hiercin, do take raine water newly fallen, and presently settle it vntill a third part be boiled away : then they put thereto a third part also of old hony in proportion to it : and so let them stand together in the Sun for forty daies together, from the rising of the Dog-star. Others, after they haue remained thus mingled and incorporate together ten daies, put it up & reserue it close stopped, for their vse ; and this is called Hydromel, which being come to some age hath the very tast of wine, & no place affords better than Phrygia.

Moreouer, Vineger was wont to be tempered with hony, [see how curioas men haue bin to try conclusions in euery thing !] which they called Oxymel ; and that in this manner : *Recipe* of hony ten pounds or pints : of old vineger five pints : of sea salt one pound ; of rain water five Sextares [*i. a gallon within one quart :*] boile them altogether at a soft fire, vntil they haue had ten plawes or walmes : which done, poure them out of one vessell into another. and so let the liquor stand and settle a long time vntil it be stale. All these wines & compositions thus brued, *Themison* (an Author highly renowned) hath condemned and forbidden expressey to be vsed. And to say a very truth, it seems that the vse of them was neuer but in case of necessity : vnlesse a man would beleeeue and say, that Ipocras, spiced wines, & those that be compounded of ointments, are Natures work ; or that she brought forth plants and trees to no other end, but that men should drink them down the throat. Howbeit, the knowledge surely of such experiments be pleasant and delectable vnto men of great wit and high conceit, whose noble spirits cannot be at rest, but euer inuentive and searching into all secrets. Now to

conclude this point, certain it is and past all question, that none of all these compositions, vnles it be those which come to their perfection by age and long time, will last one yeare full out, nay most of them will not keep good one moneth to an end.

CHAP. XVIII.

¶ *Certaine strange and wonderfull sorts of wine.*

Wine also hath prodigious and miraculous effects: for, by report, in Arabia there is a wine made, which being drunk will cause barren women to beare children; and contrariwise drive men into madnes. But in Achaia principally about Carynia, the wine makes women fall into untimely trauell: nay if a woman great with childe do eat but the verie grapes, they will slip the fruit of their wombe before their time: and yet both grape and wine differ not in tast from others. They that drinke the wine coming from the cape Træzen, are thought vnable for generation. It is reported, that the Thasiens do make two kinds of wine of contrarie operations; the one procures sleep, the other causeth watching. Among them there is a vine called Theriace, the grape whereof, as also the wine, cureth the stings and biting of serpents, as it were a most especiall Treacle. As for the vine Libanios, it carrieth the odour and smell of Frankincense, and therefore is vsed in sacrifices to the gods. But contrariwise another named Aspendios is vtterly condemned for that purpose, and no wine thereof is employed at the altar: they say also that no fowle will touch the grapes thereof. There is a kind of grape in Egypt which they call Thasia, exceeding swcet it is, and looseth the belly. But contrariwise there be in Lycia that binde as much and cause costivenesse. The grapes Ecbolides in Egypt if they be eaten, cause women with child to be deliuered before their time. Some wines there be that as they lie in the very cellar will turn and proue soure about the rising of the Dog-star; but afterward wil recouer their verdure and become quick and fresh again. In like maner there be wines which vpon the sea will change: howbeit the agitation thereof causeth those Wines which endure it to the end to seem twice as old as they be indeed.

CHAP. XIX.

¶ *What wines they be that may not be used in sacrifice:
and what waies there are to sophisticate new wines.*

For asmuch as our life stands much vpon religion and diuine service, wee are to vnderstand, That it is held vnlawfull to offer vnto the gods before sacrifice, the Wine of any vine that hath not bin cut and pruned; or that hath bin smitten or blasted with lightening, or standing neere to a jebbit or tree whereon a man hath hanged dead; or the grapes whereof haue bin troden by men whose legs or feet haue been wounded; neither is that wine allowable for this purpose, which hath bin pressed and run from the refuse of grape stoues and skins once bruised and crushed in the presse; or last of all, if the grapes haue bin filed by any ordure or dung fallen from about thereupon. Moreouer, Greeke Wines are reiected from this holy vse because they haue water in them. Furthermore, the vine it self is holden good to be eaten, namely, when the burgens and tendrils be first sodden, and afterwards preserued and kept in vineger, brine, or pickle.ouer and besides, it were very meet and conuenient to speake also concerning the maner of preparing and ordering of wine, seeing that the Greeks haue traauailed in that point seuerally, and reduced the rules belonging thereto, into the form of an Art; and namely, *Euphronius*, *Aristomachus*, *Coniades* & *Ilicesias*, are therein great professors. The Africans vse to mitigate and allay the tartnesse of their wines with plastre, yea and in some parts of their country with lime. The Greeks contrariwise do fortifie and quicken them with clay, with poulder of marble, with salt or sea water: and in some places of Italy they vse to the same effect, shauings and scrapings of stone-pitch. Also it is an ordinary thing in Italy and the prouinces thereto confining, for to condite their new wines & to season them with rosin: yea and in some places they mingle therewith the lees of other old wine or vinegre. Oftentimes also they make sliber-sauces of itself without any other mixture; namely, when they boile new wine sufficiently to the proportion of the strength, vntill the hardnesse do euaporate, and that it wax mild and sweet: but being thus ordered, it will not last, they say, about one yere. In some countries they vse to seeth their new wine to the consumption of a third part, and

make it Cuit, with which they are wont to delay the sharpnes and strength of other wines, & make them pleasant. But both in this kind of wine and in all other, the vessels ought to be prepared for the purpose, & seasoned with pitch: the treatise of which we will put off vnto the next booke, where we purpose to treat thereof, and the manner of making it.

CHAP. XX

¶ *Of diuers kinds of Pitch and Rosins: the manner of the seasoning and confecture of new Wines. Also of Vineger and salt.*

Among trees that yeeld from them a liquid substance, some there be in the East countries, and others in Europ, which ingender Pitch and Rosin. Asia likewise between both, hath of either side it some such trees. As for the East, the Terebinths put out Turpentine, the best and cleerest Rosin of all others: next to them, the Lentiskes also haue their Rosin, which they call Mastick. After which, the Cipres brings forth a third rosin, but it is of a most sharpe and biting taste. All these trees (I say) carry rosin only, and the same thin and liquid: but the Cedar sendeth forth a thick substance, and good to make pitch & tar. As for the rosin or gum Arabick, it is white in colour, strong of smell, vntoward and troublesome to him that shall boile it. That of Iury is harder, yea, and of a stronger sauor than Turpentine. The Siriack gum resembleth the hony of Athens. The Cyprian excelleth all others: of a fleshy substance it is, & like in colour to hony. The Colophonian is deeper of colour, and reddish: beat it to poulder in a mortar it proueth white: but it carrieth a strong smel with it, which is the reason that the perfumers and makers of ointments haue no vse thereof. As for that which the pitch trees of Asia do yeeld, it is passing white, and the Greeks call it Spagas. All rosins generally will dissolue in oile. Some think verily, that Potters clay will likewise do the same. But I am abashed & ashamed to report, how in these daies the same pitch whereof we speake, should be in so great account as it is, for making of pitch plaisters, to fetch off the haire of mens bodies, & all to make them more smooth and effeminat. Howbeit, the maner of seasoning new Must therewith (that when it is perfect wine, it may smell of pitch, and

bite at the tongues end) is to bestrew it with the powder of pitch at the first working, the heat whereof is commonly past and gone in nine daies. And some think that the wine will be the stronger, if the raw and green floure of the Rosin, as it issueth fresh out of the tree, be put therein; for it will quicken a small and weak wine. Now this mixture and medicine of wine [called *Crapula*] made thus of rosin, hath contrary effects: for if the wine be ouer-heady and strong, it allaieth & mortifieth the hurtful force thereof: but if it be too weak, or drink dead & flat, it reuiueth againe, and giueth it a strong taste. In Liguria, and principally along the Po, they vse to season their wines, and bring them al to their severall perfections in this maner. If the wine when it is new be mighty and strong, they put in the more of this medicine or confection called *Crapula*: if it be mild and small, then the lesse goes into it: and keeping this gage with their hand, they make both good. Some would haue one wine brued with another, the weaker with the stronger, and so (forsooth) there must needs arise a good temperature of both together: and verily there is not a thing in the world againe which hath in the nature thereof so great varietie.

In some countries, if new wine worke of it selfe a second time, it is thought to be a fault and means to corrupt it: and indeed vpon such a chance & vnhappy accident, it loseth the verdure and quick tast: whereupon it gets the name of *Vappa*, and is cleane turned to be dead or soure: in which regard also we giue a man that name by way of scorne and reproch, calling him *Vappa*, when he is heartlesse, void of reason and vnderstanding. If it were vineger indeed it were another matter: for surely though wine degenerate into it by way of corruption and putrefaction, yet a vertue and force it hath good for many speciall vses, and without which it were not possible to line so delicatly at our table as we do. Moreouer, the world is so much giuen to keepe a bruining, tempering, and medicining of wines, that in some places they sophisticate them with ashes, as it were with pluister: in other, they fortifie, recouer, and make them againe by such deuises as are before specified. But to this purpose they take the ashes to chuse, of vine cuttings, or of the oke wood, before any other. And forsooth if there be occasion to occupie sea water for this purpose, they prescribe them to fetch it far from land in the

deep sea ; & kept also from mid-March or the Spring Equinox, or at leastwise from mid-June, or summer Sunne-stead, and drawn in the night, & when the North wind blowes : but if it be got neere the time of vintage, then it ought to be well boiled before it wil serue the turn. As for the pitch in Italy, that of Brutium or Calabria is reputed for the best, to trim those vessels which are to keep wine. There is made of the rosin of the tree *Picea* (as also in Spain there comes from the wild Pines) a certain pitch which is the very worst ; for the rosin of those trees is bitter, dry, & of a strong sauor. The difference and sundry kinds of pitch, as also the manner of making the same, we will declare in the book next following, in the treatise of wild and sauage trees. The faults and imperfections of pitch, ouer and besides those cuen now rehearsed (to wit, bitternes, drynes, & strong sent) are known by the sournesse, stinking smoke, and the very adustion thereof. But ye shall know good pitch by these experiments, if the pieces broken from it do shine, if between the teeth it relent and be clammy like glew, and haue a pleasant sharpnes and soure tast withall of the vineger. In Asia the pitch is thought best which comes of the trees in mount Ida. The Greeks esteem the trees of the hil *Pieria* chief for this purpose : and *Virgil* commends that of *Narycia* before all.

But to returne againe to our brewing and sophistication of wines, they that would seem to be cunninger, or at leastwise more curious than their fellows, do mingle therewith blacke Mastick, which is engendred in Pontus, and is like to Bitumen, and thereto adde the root of *Iris* or the floure de luce, and oile. For this is found by experience, That if the vessells be scrod with wax, the wines therein will not hold, but turne soure quickly. Moreouer, we daily see, that better it is to put vp wine into those vessels, wherin vinegre hath been kept afore, than into such as had dulcet or honied wine. *Cato* sets downe a receit to trim and concinnate wine (for that is the very tearme which he vses) in this manner : Take of lie ashes sodden with cuit boiled to the halfe, one fortieth part, temper it with a pound and a half of penniroyall, or salt : and otherwhiles with marble braied & beaten into poulder among. He makes mention also of brimstone, but rosin he names with the last. But aboue al he wills to refresh and renue the wine when it now begins to come to maturity and perfection,

with new wine which he calls *Tortivum* ; and I take it, that he means that which ran last out of the wine-press : which he prescribeth also to be put vnto new wines for to get them a fresher color, as the very tincture of wine : and so it will be also of a more fattie substance, and goe down more glib and merrily. See, see how many deuises of medicines and slibber-sauces the poor wine is forced to endure, and all to please our pallat, our eye, and other sences : and yet ywis we maruell that it is so hurtfull to our bodies. Well, would you haue an experiment to know when wine is going, or enclining to be dead and soure ; dip therein a thin plate of lead ; if it change color, take it for a signe, that it is in the way of decaying. Of all liquors, wine hath this propertie to viuew, to pal, & into change in vinegre. But a thousand medicines it doth affoord, and books of Physick are full thereof. Moreouer, wine lees being dried, will serue as a match to keep fire : and without any other fewell to feed it, ye shall haue it burne and flame of it selfe. The ashes thereof is of the nature of Nitre, and hath the same vertues : and in this regard somewhat more, for that it is found to be more fattie and vnetuous.

CHAP. XXI.

¶ *Of wine-cellars.*

Now when wine is made and tunned vp in maner aforesaid, there is as great difference and diuersitie in the bestowing of it in cellars. They of Piemont about the Alpes, doe put vp their wines in wooden barrels, bound well with hoopes, for warmth : and moreouer, if the winter be very cold, they make fires in their cellars or butteries, to keep them for being frozen. I will tell you a strange wonder, yet true and to be verified, not by heare-say but plain eiesight. There were seen vpon a time whole heaps & huge lumps of wine congealed into ice, by occasion that the hoopes of the hogsheads burst that contained the wine : and this was held for a prodigious token. For indeed wine of it owne nature will not congeale and freeze, only it will lose the strength, and become appalled in extremitie of cold. In warmer climates and more temperat, they fil their wines into great stands and steanes of earth, which they set into the ground, either ouer the head all whole, or else by halfe ; deeper or shallower, according to the situation & temperature of the region. Likewise they giue

the wine open aire in some places : whereas in other they keep it close within house in tauernes and cellars. And thereto belong these and such like rules. First, that one side of the wine-cellar, or at leastwise the windows, ought to stand open to the North, or to the East in any wise, where the Sunne riseth at the time of the *Æquinoctiall*. *Item*, that there be no muckhils nor priuies neer : no roots or trees, nor any thing of a strong and stinking sauor : for that wine is of this nature, to draw any smell very quickly into it : and aboue all, Fig trees (as well the wild as the tame) be hurtfull to wine-cellar. *Item*, as touching the order of placing the wine-vessels, they ought to stand a pretty distance one from another : for fear of contagion, for that wine is alwaies most apt to catch infection very soon. Moreouer, it matters much of what proportion and fashion the pipes, tubs, and such vessels be made. Those with great bellies and wide mouths, are not so good. Also they must be nealed with pitch, presently vpon the rising of the dog-star : afterwards doused and washed all ouer either in the sea or else salt water, then to bee seasoned and strewed with vine ashes or cley, and being scoured, they ought to sweeten them with a perfume of Myrrhe, which were good to be done also to the very cellars oftentimes. Furthermore if the wines be weak and smal, they had need to be kept in tubs and hogsheds, let downe within the ground : but the strong and mighty wines may lie aboue ground in the open aire. Prouided alway, that wine vessels be neuer filled top full : but the void part that is left, and stands aboue the wine would be thoroughly dight with thicke wine made of withered grapes or sodden wine to the halfe, and saffron mingled withall, yea, and old pitch, together with cuit. Thus also ought the lids and bungs of the vessels to be ordered, with an addition besides of mastick and pitch. In the deep of Winter they must not be vnstopped and opened in any case, vnlesse the weather be faire and cleare. Neither when the wind is Southerly, or the Moon in the full. This also is to be noted, that the floure or mantle which the wine casts vp to the top, is good when it is white, if it be red, it is a very bad signe, vnlesse the wine it selfe be of that color. Moreouer, if the vessels be hote, or the lids do sweat, it is no good signe. Note also that the wine which soone begins to mantle and cast vp a floure incontinently, or to yeeld another smell than

the own, wil not continue long good. As for the cuits, whether they be sodden to the half or the thirds, they ought to be boiled & made when the skie is without a Moon, that is to say, in the change, and vpon no day else. Moreouer, the decoction must be in leads, and not in coppers; with walnuts among to receiue al the smoke, which otherwise might infect the cuit. In Campaine they let their best wines lie abroad in vessells, euen in the open aire, to take the Sun, the Moone, raine, and wind, and all weathers that come: and this is thought to bee best for them.

CHAP. XXII.

¶ *Of auoiding Drunkennesse.*

If a man marke and consider well the course of our life, we are in nothing more busie and curious, nor take greater paines, than about wine: as if Nature had not giuen to man the liquor of water, which of all others is the most wholsom drink, and wherwith all other creatures are wel contented. But we thinking it not sufficient to take wine our selues, giue it also to our Horses, Mules, and labouring beasts, and force them against Nature to drink it. Besides, such pains, so much labor, so great cost and charges we are at, to haue it, such delight and pleasure we take in it; that many of vs think, they are borne to nothing else, & can skill of no other contentment in this life: notwithstanding, when all is don, it transports & carries away the right wit & mind of man, it causes fury and rage, and induces, nay, it casts headlong as many as are giuen thereto, into a thousand vices and misdemeanors. And yet forsooth, to the end that we might take the more cups, and poure it downe the throat more lustily, we let it run thorough a strainer, for to abate and gueld (as it were) the force thereof: yea, and other deuises there be to whet our appetite thereto, and cause vs to quaffe more freely. Nay, to draw on their drinke, men are not afraid to make poisons, whiles some take hemlocke before they sit downe, because they must drinke perforce then, or else die for it; others, the powder of the* pumish stone, & such like stuff, which I am abashed to rehearse and teach those that be ignorant of such leaudnesse. And yet wee see these that be stoutest and most redoubted drinkers,

* *Vide lib. 36 : cap. 21 :*

euert those that take themselves most secured of danger, to lie sweating so long in the baines and brothel-houses for to concoct their surfet of wine, that otherwhiles they are carried forth dead for their labour. Ye shall haue some of them again when they haue been in the hot house, not to stay so long as they may recouer their beds, no not so much as to put on their shirts : but presently in the place, all naked as they are, puffing & laboring still for wind, catch vp great cans and huge tankards of wine (to shew what lustie and valiant champions they be) set them one after another to their mouth, pour the wine downe the throat without more adoe, that they might cast it vp againe, and so take more in the place ; vomiting or revomiting twice or thrice together that which they haue drunke, and still make quarrell to the pot : as they had been borne into this world for no other end but to spill and mar good wine : or, as if there were no way els to spend and wast the same, but thorow mans body. And to this purpose, were taken vp at Rome these forreine exercises, of vaulting and dancing the Morisk ; from hence came the tumbling of wrastlers in the dust and mire together ; for this, they shew their broad breasts, beare vp their heads, and carrie their neckes far backe. In all which gesticulations, what do they else but professe that they seek means to procure thirst and take occasion to drink ? But come now to their pots that they vse to quaffe and drink out of : are there not grauen in them faire pourtrais think you of adulteries ? as if drunkennesse it self were not sufficient to kindle the heart of lust, to pricke the flesh, and to teach them wantonnes. Thus is wine drunke out of libidinous cups : and more than that, he that can quaffe best and play the drunkard most, shal haue the greatest reward. But what shal we say to those (would a man think it ?) that hire one to eat also as much as he can drink, and vpon that condition couenant to yeeld him the price for his wine drinking, and not otherwise. Ye shall haue another that will inioine himselfe to drinke euery denier that he hath won at dice. Now when they are come to that once and be thoroughly whittled, then shall yee haue them cast their wanton eies vpon mens wiues ; then fall they to court faire dames and ladies, and openly bewray their folly euen before their jealous and sterne husbands ; then (I say) the seerets of the heart are opened and layed abroad. Some ye shal haue in the mids

of their cups, make their wils, euen at the very board as they sit : others againe cast out bloody and deadly speeches at randon, and cannot hold but blurt out those words which afterwards they eat againe with the swords point : for thus many a man by a lauish tongue in his wine, hath come by his death and had his throat cut. And verily the world is now growne to this passe, That whatsoeuer a man saith in his cups, it is held for sooth ; as if Truth were the daughter of Wine. But say they escape these dangers : certes speed they neuer so well, the best of them all neuer seeth the Sun-rising, so drowsie and sleepey they are in bed euery morning ; neither liue they to bee old men, but die in the strength of their youth. Hence comes it, that some of them looke pale, with a paire of flaggie blad-cheekes ; others haue bleared and sore eise : and there be of them that shake so with their hands, that they cannot hold a full cup, but shed and poure it downe the floore. Generally they all dreame fearfully (which is the very beginning of their hell in this life) or els haue restlesse nights : & finally, if they chance to sleep (for a due guerdon and rewarde of their drunkennesse) they are deluded with imaginary conceits of *Venus* delights, defiled with filthy and abominable pollutions : and thus both sleeping and waking they sin with pleasure. Well, what becomes of them the morrow after ? they belch soure, their breath stinketh of the barrell, and telleth them what they did ouer night ; otherwise they forget what either they did or said, they remember no more, than if their memory were vtterly extinct and dead. And yet our iolly drunkards giue out and say, That they alone inioy this life, and rob other men of it. But who seeth not, that ordinarily they lose not onely the yesterday past, but the morrow to come ? In the time of *Tiberius Claudius* the Emperor, about 40 years since, certaine out-landish Physitians and Monte-banks, who would seem to set themelues out by some strange nouelties of their own, & so get a name, brought vp at Rome a new deuise and order, to drink fasting, and prescribed folk to take a good hearty draught of wine before meat, and to lay that foundation of their dinner. Of all nations, the Parthians would haue the glory for this goodly vertue of wine-bibbing : and among the Greeks, *Alcibiades* indeed deserued the best game for this worthy feat. But here with vs at Rome *Nouellius Torquatus* a Millanois, wan the name from all Romans

& Italians both. This Lombard had gone through all honourable degrees of dignity in Rome; he had bin Pretor, and attained to the place of a Proconsull. In all these offices of state he woon no great name; but for drinking in the presence of *Tiberius*, three gallons of wine at one draught and before he tooke his breath again, he was dubbed knight by the syrname of *Tricongius*, as one would say,* The three gallon knight; and the Emperor, sterne, seuere, and cruell otherwise though he was, now in his old age (for in his youthfull daies he was giuen ouermuch to † drinking of wine) would delight to behold this renowned and worthy knight, with great wonder and admiration. For the like rare gift and commendable qualitie, men think verily that *C. Piso* first rise; and afterwards was aduanced to the Prouostship of the city of Rome, by the said *Tiberius*, & namely for that in his court being now emperor, he sat 2 daies and 2 nights drinking continually, and neuer stirred foot from the boord. And verily *Drusus Cæsar* (by report) in nothing more resembled his father *Tiberius*, than in taking his drink. But to return again to noble *Torquatus*, herein consisted his excellency, That he did it according to art (for this you must take withall, there is an art of Drinking, grounded vpon certain rules and precepts.) *Torquatus* (I say) drank he neuer so much, was not known at any time to falter in his tongue, neuer eased himself by vomiting, neuer let it goe the other way vnder boord: how late soeuer he sat vp at the wine ouer night, he would be sure to relieue the morning watch & sentinel. He drunk most of any man at one entire draught before the pot went from his head: and for smaller draughts besides, he went before all other in number; his winde he neuer tooke while the cup was at his mouth, but iustly obserued the rule of drinking with one breath; he was not known to spit for all this: & to conclude, he would not leaue in the cup, so much as would dash against the pauement, & make the least sound to bee hard: a special point and precise law to prevent the deceit of those that drinke for a wager. A singular glory no doubt in him, and a rare felicity. *Tergilla* challenged *M. Cicero* the younger, son to that *M. Cicero* the famous Orator, and re-

* Not the thrice gallant knight.

† Whereupon he was called *Biberius Mero* for *Tiberius Nero*.

proched him to his face, that ordinarily he drunk 2 gallons at once : and that one time aboue the rest when he was drunke, he flung a pot at *M. Agrippa* his head. And truly this is one of the fruits and feats of drunkennesse. But blame not young *Cicero*, if in this point yet he desired to surmount him that slew his father, *M. Antonius* I mean ; for he before that time strained himselfe, and stroue to win the best game in this feat, making profession thereof, as may appeare by a booke that he compiled and set forth with this title, *Of his owne drunkennesse* : wherein hee was not ashamed to avow and justifie his excesse and enormities that way : and thereby approoued (as I take it) vnder pretence and colour of his drunkennesse, all those outrages of his, all those miseries and calamities that he brought vpon the whole world. This treatise he vomited and spued out a little before the battell of Actium, wherein he was defeated : whereby it may appeare very plainly, that as he was drunken before with the bloud of citizens, so still hee was the more bloud thirsty. For this is a property that necessarily followeth this vice, That the more a man drinketh, the more he may, and is alwaies dry. And herein spake to good purpose a certain Embassadour of the Scythians, saying, That the Parthians the more they drunke, the thirstier they were.

As touching the nations in the West part of the world, they haue their drinks also by themselues made of * corn steeped in water, whereof they will drinke to the vtterance, and be drunk : and namely in Spaine and France, where the manner of making the same is all one, howsoever they haue† diuers names : and in Spain they haue devised means that these drinks (Ale or Beer) wil abide age, & continue stale. In Egipt likewise they haue inuented such kind of drinks made of corn : so that no part or corner of the world there is, but drunkennesse reigneth. And verily these liquors howsoever they be named, they vse to drinke entire as they bee, and made of the very strength of Malt : neuer delaying the same with water, as we do wines. But it may be sayd, That Nature hath endowed & inriched those countries with abundance of corn, and therefore they may wel do it. Oh how

* *i.* Malt.

† Zythus and Curmi. Ale and Beere.

industrious we are to maintain our vices ! There is a deuise found (would euer any man haue thought it ?) how water also should make men drunke. Two liquors there be, most pleasing and acceptable to mens bodies, wine within, & oile without. Both proceed from two speciall trees, howbeit, of the twaine, Oile is necessary, and Wine may be better spared. And verily, men haue not bin idle in the making of good oile : howbeit, they haue beene more addicted and giuen to make Wines for drink ; as may appeare by this, that reckoning but the generall kinds thereof, a man may find 195 sorts of wine : but if a man would subdiuide and destribute those heads into their branches, he should meet almost with twice as many : but of Oyles there bee not so many kindes by farre. Whereof we purpose to treat in the booke next following.

INSANITY FROM A PSYCHOLOGICAL POINT. OF VIEW.

[Freely translated from the *Revue de Deux Mondes*
of Nov. 15, 1876. By the Editor.]

If reason is the privilege of man, by an unhappy compensation we may say as much of insanity. It does not seem that the humble faculties of the lower animals are ever exposed to this terrible misfortune, and in the human species itself it is the superior races which furnish to mental maladies almost all their victims. Rare among savages and among infants, insanity becomes more and more frequent in proportion as the wants of humanity become more numerous and more complex, and the cerebral energies are exerted towards the pursuit of objects which satisfy those wants. Insanity is thus, to use a scientific term, a *function* of civilization. A melancholy consequence this, worthy of the attention of the philosopher, the moralist, and the statesman. In the face of the perspective of unlimited progress which has been achieved before our very eyes, in the midst of the hymns, which above all glorify the omnipotence of human reason, one asks with anxiety, if this reason, the agent of progress, does not become more fragile by its own triumphs; if man has not abused to the extent of breaking that marvellous and delicate instrument the brain; if, in fine, by the exclusive and premature development of the intellectual faculties, our system of education, breaking for the benefit of one alone the equilibrium necessary to all the functions of the organism, has not brought about these catastrophes. And therefore has the Academy of moral and political Sciences moved itself in the matter. In 1867 it brought to its meeting the question of insanity considered from a philosophical point of view, and in 1872 it gave the first Prize to a Memoir, brought forward just now in a voluminous work, of which the author M. P. Despine has already proved, by some remarkable works on morbid psychology, a rare competence in these matters. This work of M. Despine, notwithstanding some hazardous doctrines, appears to us to have a considerable importance, and we propose to point out the novel ideas which he has thrown out upon the obscure problems of the psychology of the insane.

I.

What is insanity? Is it a malady of the organs, or is it a disease of the mind? And if the mind may be diseased, by what causes can it become so? These causes themselves, are they purely organic or exclusively moral? What are the perversions to which the intellectual faculties, the affections, the free will are severally subject? Lastly, how are we to prevent their effects, or combat them when they are already manifest? These are grave questions, which humanity has put to itself for a long time since, and which science even in the present day can hardly answer with certitude. With their marvellous philosophic instinct the Greeks had formed a comparatively exact idea of insanity. They saw in it only a disease of which the cure required remedies at once for the body and the mind. Hippocrates refuted the popular opinion according to which insanity comes directly from the divinity; he determined its symptoms with sagacity, and the treatment which he prescribed was purely medical. Freed from all superstitions the great Greek physicians never used toward the insane those absurd severities, which constituted, to the commencement of the present century, the tortures and the despair of our lunatic asylums. Asclepiadis expressly recommended the avoidance of corporeal restraint; he only permitted the tying of the insane, whenever they proved dangerous. In the Middle Ages the treatment of the insane was less enlightened and less humane. A false asceticism accredited the opinion that the body was a vile and degraded object, that it was necessary to combat it and mortify it to the uttermost, because it was the citadel of perverse desires, the temple of Satan. These beliefs were but exaggerations of the most noble moral doctrines. Ignorance and superstition took possession of them, and very frequently formed out of them the most cruel weapons against the insane. If, even in the plenitude of his purity and reason, man has the risk of carrying the devil within his body, what must it be when he has become alienated in mind? It is then truly that Satan reigns as master in this impure prison of the flesh, he drives out of it the immortal and divine soul, and lets loose in it all his blasphemies and all his furies. The mad man becomes one *possessed*; as such he is nearly an accursed being, because apparently this is in punishment of his sins, as it is

also the work of the devil. This explains the barbarity of the treatment which for a long time used to be inflicted upon the unfortunate victims of insanity. Many piles were lighted up for these unhappy men who were but amenable to medicine; but medicine had little faith in herself. Practitioners, even the most well-informed and learned, had, according to Dr. Maudsley, no other aim than to diminish somewhat the power of the devil. They recognised the existence "of a preparation and disposition of the body by means of disturbances of the humours, giving great advantage to the devil to render himself master; this trouble was treated with drugs and potions, in consequence of which the devil was driven out, and had no power over the body."

By an inverse effect of an analogous superstition, furious mad men were generally regarded in the East as sacred persons and treated with great respect. They looked upon the possessed as possessed of the Divine Spirit. They attributed to them the supernatural character which Plato, in his *Phædrus*, recognizes as a certain species of frenzy, and which gives to man the power to produce thoughts and deeds which sane reason is incapable of. The belief in oracles, in prophecies, perhaps owes its origin to these manifestations of insanity which are taken as direct inspirations of the divinity.

- It is necessary to come to the eighteenth century in order to find the first attempts at a scientific theory of insanity. Stahl, the father of modern animism, derives it from the passions which takes possession of the attention and of reflexion. Madness, according to him, is an error, but this error is not the proper work of the intellectual faculties; it is produced by a perversion of the affective faculties. This doctrine, with some variations, is also maintained by the most celebrated authorities on the subject both of the last and of the present century, Ideler, Griesinger, M. Baillarger, and the philosophic Herbert. Stahl alone, true to the fundamental principle of animism, absolutely denied that insanity had its cause in a pathological state of the organism, which it is no longer possible to contest in the present day.

One of the theories, the most important by reason of the gravity of the moral consequences which it involves, is that of

the German physician Heinroth. According to him insanity is nothing else than a sin. Man never becomes insane except by his faults, and he who all life keeps in his heart the image of God will never have to fear that his reason will leave him. The anguish, the exaltation, the furor, which characterise certain forms of insanity, these are also disordered manifestations of remorse. Mental alienation is not, and never can be, hereditary, because the thinking *me*, the immortal soul, is not hereditary. What parents can transmit to their offspring are organic dispositions, against which it is always possible to re-act. Man possesses a moral force essentially invincible by all physical forces, and if it gives way in the struggle, the responsibility of the defeat is due entirely to it.

A theory like this coming from a physician is a surprise. Besides one can never deny the heredity of insanity without a flagrant contradiction of facts. Is it not then monstrous not to see in the insane anything but the culprit? Does not this view declare the task of the physician as utterly useless? Does it not authorize all the severities ever used towards the unhappy victims of insanity? And is this not going back, in the name of science, to the ignorant barbarities of the middle ages? That man may have, in a certain measure, the power to combat the predispositions, however little marked in insanity, that he may be able, by well-understood and firmly practised moral hygiene, to remove some of the causes which sometimes determine the explosion of the disease, observation of facts will enable us by and bye to affirm. But it is also only too true in a great many cases that no moral force can charm away the tempest which bursts all at once upon the brain, and it is as little scientific as charitable to lay any responsibility upon these unfortunate victims of an organism in delirium.

The defect of the majority of these *alienist* physicians, not excepting the illustrious Esquirol, is a psychological doctrine. To understand what the faculties of the mind are, what their number is, and what the role of each of them is in the development of psychical life,—does not demand much mental capacity. The words *reason, sentiment, affections, volition, free will*, are taken in the vague and current acceptation, given to them by the vulgar. No attempt is made at definition, and consequent-

ly there is no scientific exactitude. On the other hand, psychologists, all absorbed in their analysis of the proper *me*, have rarely cast their eyes outwards; they have never been able to conceive of any other thing than the normal functions of the faculties which they discover in themselves; they have believed all men cut in the same psychological pattern, and have thus found themselves in the impossibility to explain insanity. Unable to explain, they have neglected the study of insanity. And still a good theory of insanity is the indispensable counter-proof, and the most certain verification, of a good theory of the faculties of the mind. The physician can never comprehend insanity, if he has only vague notions of the psychology of man in health; nor can the psychologist have possession of an experimental and complete science of the *me*, if he cannot render an account of the deviations and strange perversions to which the powers of the mind are subjected in insanity. Psychology can in this matter throw light upon medicine, and in return can be enlightened by medicine, and it is a matter of regret, for one as for the other, that the necessity should still have been so generally misunderstood.

This reproach, M. Despine merits less, for, before approaching the complex problem of insanity, he takes care to give a complete exposition of the psychology which properly belongs to it, although perhaps he deceives himself with the illusion of the importance and novelty of some particular theories, and sometimes he takes for a discovery a simple change of nomenclature. However this may be, if we would follow him in his exposition of insanity, we must briefly indicate the essential features of his psychological doctrine.

M. Despine recognises two orders of faculties between which he establishes a profound distinction: the intellectual faculties, and the moral or instinctive faculties. The first are three in number, perception, memory, and the reflective faculty, of which the essential operations are attention, judgment, reasoning. These three faculties are truly primitive and irreducible; they cannot, even in insanity, be perverted. The only kind of alteration which can overtake them is enfeeblement.

The moral faculties, which M. Despine prefers to designate by the name of the instinctive faculties, are those by which man acquires the knowledge of what he ought to do in order to act

wisely and reasonably. They manifest themselves, by the inclinations, the propensities, the repulsions, the tendencies, the wants of the mind ; in a word, by the instincts. The knowledge which they give is never the laborious and tardy product of reflection ; it is natural, spontaneous, instinctive. All innate knowledge,—whatever has relation with the wants of the body or with those of the spirit,—is due to these faculties.

M. Despine attaches but a moderate importance to the methodical and complete enumeration of these moral faculties, and the list which he has given, present all the characters of incoherence and confusion. One finds in it, *pell mell*, the domestic affections, prudence and foresight, politeness, hope, faith, the sentiment of authority, curiosity and causality, modesty, the sentiment of beauty, the sentiment of good and bad or the moral sense, the religious sentiment composed of the very complex sentiments of causality, veneration, gratitude, hope, and faith. By the side of the good and reasonable tendencies which truly merit the appellation of moral are the perverse, irrational propensities, which are equally innate : such are jealousy, hatred, vengeance, pride, cruelty, dishonesty, contempt, ingratitude, avarice, cupidity, covetousness, &c. These evil sentiments unite to form evil sentiments the most complex, and conjointly with the good, they constitute the instinctive nature, good or bad, of each individual.

The instinctive elements, good or bad, of the mind, manifest themselves by the impulsions, the desires which determine the greater part of our actions, but most frequently they limit themselves to awakening ideas in the mind, to suggesting knowledge, and their role is then purely speculative. This is above all true for the sentiment of duty which M. Despine calls an emanation of the moral sense, and which he considers as a pure instinct.

The motives of actions which have their birth in the instinctive faculties are reduced to two, interest and duty. When two desires are present, and when the principle of moral obligation does not intervene, the strongest desire necessarily succeeds. This is a law of mental dynamics without exception, because the strongest desire expresses for the individual the greatest good, and it is impossible that natural impulsion will turn us from the greatest good, to carry us to lesser good, or to evil. Under the empire of these desires alone man does only obey, and cannot

but obey, the motive of interest. In this, man does not differ from the lower animals.

When the moral sense manifests itself under the inferior form of a desire, of a want of the heart, the preceding law still finds its application. If I can do good only because it is a pleasure for me to do it and a pain not to do it, I yield to a desire stronger than antagonistic desires, I only seek in it an egotistic satisfaction; this is always the motive of interest. It is otherwise when the moral sense assumes that superior form which M. Despine calls the sentiment of duty. Then, under the influence of this sentiment, I understand the absolute obligation to act in a certain manner, to abstain from certain acts. Let my sensibility be all clashed, the duty which commands creates in me the possibility of resistance; the law of interest ceases to be the unique rule of my conduct, I can will and act otherwise than wished and required by the strongest desires. A new motive has sprung up. Then, but then only, I am truly free.

M. Despine distinguishes profoundly between volition and free will. Volition by itself is only the necessary compliance of the mind to the solicitations of the strongest desire. In this sense it is not free, and is common with the animals. There alone is liberty where the sentiment of obligation sacrifices pleasure to duty. It is in this case alone that man escapes from the fatality of the selfish impulsions, and acquires the eminent privilege of breaking the chain of universal determinism.

Man alone is free; and even among men very few are so; and a small number of those, who possess this free will, make use of it. In fact, according to M. Despine, the moral sense under its two forms, love of good, and sense of duty, reaches its full development only among individuals of the superior races; among these even it is often atrophied, incomplete; sometimes it is entirely defective. How many men there are who never listens to the voice of duty! It is a vice, a moral infirmity, very much more frequent than one thinks. These men are not free. Civilly responsible for the evils they commit, they are not morally so. They can only be turned from evil by certain instinctive faculties of an inferior order, such as the domestic affections, love of their fellows, prudence, self-love; but the sublime sentiment of duty, and of remorse the result of duty transgressed, are eternally unknown to them.

In M. Despine's theory, Reason is not a special and distinct faculty: it is only the aggregate of knowledge which the various instinctive faculties furnish; it is in fact the product of those faculties. Reason is more or less elevated, according as the instinctive faculties of a superior order are more or less developed; it is incomplete or partial when one or more of them are entirely deficient. The instinctive or moral faculties exist for the most part in germ among all men normally constituted; they are developed by education. As regards those which are congenitally wanting, education can never give them birth. From difference of the intellectual faculties, which admit of no other alteration than enfeeblement, the instinctive or moral faculties are subjected to two species of alteration, enfeeblement and perversion. They may be enfeebled to the extent of vanishing altogether. They may be perverted in two ways: by exaggeration, when for example, self-love degenerates into pride, love of property into avarice; by change by disease, when the moral sentiments vanish, or are replaced by bizarre and perverse sentiments. "Under the influence of some pathological causes, patients change their character; they were mild, polite, benevolent, moral, they become irascible, perverse, cruel, cross; they were gay, agreeable,—they become taciturn, distrustful, timorous. The changes which take place in the brain as the consequence of age can, by altering the activity of that organ, produce great modifications in the morale of old men, modifications which make them timorous, restless, egotistic." By their exaggeration, by their imperious cry for satisfaction, the moral perversions are the cause of physical and moral suffering. Hence have they received the name of the *passions*. We shall see that they play a preponderant part in insanity.

We will conclude this exposition by mentioning that, according to M. Despine, imagination is not a simple faculty, that it is formed by the concurrence of three orders of primitive faculties: A creative faculty, especial to imagination, the instinctive elements, and the intellectual faculties. When the sentiments and the passions dominate in the mind, the creative faculty of the imagination comes spontaneously into action, interprets the acts and language of others, not according to truth, but according to the inspirations of the sentiments and passions, with which the individual is animated. This work is entirely involuntary: under the

influence of passion, when it is powerful, man is incapable of doubting the reality of the conceptions which the imagination imposes upon him.

Such are the principles by which M. Despine has pretended to explain the varieties so numerous of insanity. It will be superfluous to criticise at length this psychology. M. Despine has not demonstrated that the intellectual and the moral faculties might be to this extent independent of one another; and on the other hand he appears to have wrongly classed among instinctive or moral faculties principles purely intellectual, such as, for example, what he calls causality. That there is something spontaneous in the tendency which carries the human mind to the search after causes one cannot contest; but this amounts to saying that the development of the intellectual faculties is spontaneous before they become reflective, a doctrine which is not new. It is equally strongly contestible that reason is only an assemblage of knowledge suggested by the instinctive or moral faculties. We can no more admit that the notion of duty is the product of pure instinct. To conceive the obligation to resist certain desires, to accomplish certain acts, this is primarily an intellectual act, though this knowledge is not the result of the reflective or discursive faculties of the mind, and though it manifests itself spontaneously in reason. In fine, if it is true that duty is not conceived by all men with equal clearness, if very frequently defect of education, bad example, or the violence of the inferior instincts, prevents this sublime idea from shining in all its splendour in the conscience, it does not follow that among men morally sound it is ever completely absent; the free will is not, then, as asserted by M. Despine, a sort of exception in humanity, the privilege of a small number, and this number making but rare use of it.

Be these criticisms what they may, what interests us above all here is to follow M. Despine in the applications he has made of his psychology in his definition of insanity. "Insanity," says he, "consists in an involuntary moral blindness of the mind regarding false, absurd, immoral, and irrational ideas, and in bizarre and perverse propensities inspired by the passions;—a blindness caused by the absence of rational sentiments, which alone are capable of enlightening the mind on the nature of these

ideas and these feelings, that is to say, by moral unconsciousness in regard to them.

Two conditions are consequently necessary to the existence of insanity. There must be one or more irrational, absurd; false, immoral ideas, or else exaggerated, bizarre, perverse propensities and desires;—ideas and propensities inspired by the passions. But then this is only the object of insanity, this is not insanity itself. That which essentially constitutes it, is the involuntary blindness of the mind, which prevents it from comprehending what ideas and what passions are bizarre, absurd and immoral, and this blindness comes from the violence of the passions, which possess the mind, and stifle or destroy antagonistic sentiments which can enlighten it.

It follows, therefore, that insanity is not properly a disease of the organs, but an abnormal condition of the soul. It may be that insanity exists without any pathological sign appreciable to observation, without any lesion of the brain. A man in health may then become mad, and this is one of the points upon which M. Despine strongly insists. Nevertheless it is impossible that the state of the mind, which constitutes insanity, has not its cause in some physiological disposition. The brain is certainly the organ by which the faculties manifest themselves, and when a perverted passion takes possession of the mind to the extent of stifling the inspirations of reason, one ought to see in this exaltation an abnormal activity of the cerebral substance. Recent discoveries seem to establish the fact that paralysis or excitation of the vaso-motor nerves of the brain plays an important part in this matter. We know that the capillaries which carry the blood to all parts of the body contract or dilate under the influence of certain nervous fibrillæ distributed in their tissue. Under the influence of lively emotion these nerves can be excited or paralysed. When the vaso-motors are paralysed, the capillaries no longer contract, and, in consequence, become congested; these congestions give rise to microscopic apoplectic centres. If on the contrary the vaso-motor nerves are excited, the capillaries contract, the brain receives less blood, and its activity becomes, in consequence, diminished. Dr. Wolf has found that the psychical phenomena which are exaggerations of self-love,—the exaltation of the passion of vanity which characterise certain

species of insanity, accompanied with loquacity, excessive irritability,—are determined by sanguineous congestions due to dilatation of the vessels, that is to say, by paralysis of the vaso-motor nerves. On the contrary, the psychical phenomena characterised by sad and depressing passions are produced by contraction of the vessels of the brain, giving rise to anæmia of the organ, that is to say, by irritation of the vaso-motor nerves. These morbid modifications of cerebral circulation explain how insanity may exist without there being any possibility of discovering any lesion in the cerebral tissue. The lesions appear late, when profound and continued disorder of the circulation have more or less destroyed the cerebral tissue. Then the intellectual faculties have become more or less affected. This is the period of chronic mania, of dementia, the last term of insanity.

It has, in fact, been proved by experience that insanity may exist without the intellectual faculties being sensibly altered. In grave perversions of the moral faculties, in complete change of character of the individual, all that we have frequently observed is that the intelligence is subsequently and by *contre-coup* affected. M. Despine maintains that in insanity properly so called, the intellectual faculties remain absolutely intact, an opinion which appears to us hazardous.

Classification of the numerous varieties of insanity has very often been attempted. Each alienist physician has proposed one of his own, but not one has yet commanded universal approbation. Without himself exaggerating the importance of classification which always but imperfectly corresponds to the almost infinite complexity of reality, and which often carries to excess the splitting-up of shades of difference scarcely distinguishable, M. Despine has one of his own: it is purely psychological. In the first class he ranges all the insanities manifested by passionate, false, bizarre, perverse inspirations, in regard to which the mind is blind, no antagonistic faculty enlightening it about the unreasonable character of those inspirations. These are the diverse forms described by Esquirol under the names of monomania and lypemania. The second class comprehends the alterations characterised by a partial destruction of the psychical faculties and by a profound disturbance of those which still persist: the type of the genus is the maniac state, acute and chronic.

Lastly, the third class comprises the alienations which manifest a destruction more or less complete of all the faculties : Such are senile dementia, and dementia properly so called, which naturally terminate all the pathological insanities.

II.

The insanities of the first class which M. Despine proposes to designate under the name of instinctive insanity, present themselves principally under three forms, called by Esquirol, lesion of intelligence, lesion of the affections, lesion of the will.

Under the first form, insanity manifests itself by one or more delirious ideas created by the imagination under the influence of the dominant passion, a passion which has roused up a pathological activity of the brain. These ideas are always false or absurd, sometimes perverse ; possessed by the passion, the mind is impotent to disabuse itself of their influence.

These passions, which excite delirious ideas, may be of two sorts, expansive or depressive ;—expansive, when they are perversions of pride, of ambition, of mirth ; they engender ideas of power, of grandeur, of wealth ; these ideas do not present themselves under a definite form ; but very soon the imagination, excited and directed by passion, creates to itself an object, with which it identifies itself and in some sort adores itself. Thus patients believe themselves to be prince, king, pope, Jesus Christ, God.

The depressing passions, such as grief, distrust, anxiety, discouragement, fear, terror, give birth to ideas the very opposite. The mad man fears that he is pursued by the police, persecuted by secret societies, dishonored, ruined, condemned to death. Facts the most insignificant are to him evident proofs of snares that have been laid for him, words the most benevolent become threats. He listens to every noise, trembles always, and fears all. Some fear that they have legs of glass, and dare not walk for fear of breaking them ; others fear that their organs are destroyed, obstructed ; that they have no blood, no stomach, that their throat is obstructed, or that their food is poisoned, and dominated by this fear they refuse to drink and to eat, and allow themselves to die of thirst and hunger. The patient, whose vital energy has become reduced, thinks that he is dead ; he remains

inactive, immoveable, and does not utter a word. The delirious idea once produced under the empire of passion, the intelligence places itself entirely under its service. In all other respects the mad man appears reasonable, and even the delirious idea being supposed to be true, it seems that the intellectual faculties and operations properly so called, perception, memory, judgment, reasoning, go on as regularly as in health.

The fact of the integrity of the intellectual faculties in insanity in general, and in this first form in particular, is strongly maintained by M. Despine. He thinks, with Locke, that the mad reasons correctly from false premises. One, for example, takes off his garments in public; here is an act apparently absurd and inexplicable; but for the mad man it is perfectly logical. The unhappy man is Adam, and he ought to wear his costume. Another, while driving in a road in London, suddenly deals the blow of a hatchet upon a horse that passes by his own; nothing can justify in appearance this ridiculous aggression; but the mad man believes himself to be Jesus Christ, and by killing a horse on the public road, he gathers a crowd around him, who notice his person, when he will convince every one of his divine mission. Here is a chain of bizarre ideas, but at bottom sufficiently logical: the faculties of reasoning and association are therefore intact.

. The same with the faculty of perception. It is a law that, under the domination of a passion which possesses the mind, the intellectual faculties follow in their development the direction impressed upon them by this passion. The organs of the senses can act in insane as in sane men. External objects produce their normal impressions upon his nerves and his brain. In a word, perception is not affected. But the dominant passion gives the lie to its testimony, and the mind places itself under the direction of this passion. A mad man is convinced that his leg is of glass; for fear of breaking it he refuses to make the least movement; to him who will undeceive him of his error, he will reply;—I know well that my leg is not of glass, and nevertheless it is. “A mad woman,” relates M. Despine, “who experienced pain in her bowels after each meal, imagined that her food was poisoned. She reasoned so well on other subjects, and even upon this fixed idea, that we have sometimes attempted to combat her

error by reasonable proofs, forgetting that we had to deal with one whose brain was diseased. One day after having listened quietly without interrupting us, she told us: You may have reason on your side; but I *feel* that it is as I have said to you, the world will not be able to remove this idea, and I will not be convinced of the contrary." This mad woman, in saying, *I feel*, instead of *I know*, used an expression which was remarkable for its exactitude. She did not invoke material evidence of the senses, nor the intellectual evidence of reasonable proof, but the testimony of her instinctive nature, of her mode of feeling, the strongest of all testimony to the mind; as she said *she will not be convinced of the contrary*, she felt that no proof will be a match to the testimony of her lypemaniac passion of fear and distrust.

To feel and to know are, in fact, very different things. To feel belongs to the order of the affective faculties; to know to that of the intellectual faculties. The mind, entirely under passion, no longer attends to the protestations of rational evidence; but this does not disappear for that: the faculties, which reveal themselves to the mind, have not suffered any perversion; properly speaking, reason is not destroyed, it is only submerged in the tempest of passion, always ready, when it is appeased, to resume its natural empire. Sometimes it is on the point of triumphing; a terrible struggle ensues, of which the mind of the unhappy mad man is at the same time the theatre and the victim. But a purely intellectual act, such as demonstration, can never instantaneously modify the morbid state of the brain which has produced the exaltation of the passion, which, drawing fresh energy even from contradiction, always re-establishes the complete domination of the delirious idea which it has created. A remarkable example of these alternations is seen in the story narrated by M. Baillarges, and which has been borrowed by Dr. Maudsley.

When M. Trelat was charged with the temporary direction of the Bicêtre, he saw a patient there who believed that he had solved the problem of perpetual motion. After having vainly employed all the arguments he could use to remove this imagination, the idea occurred to him that the great authority of Arago will have the salutary effect of convincing this individual. Arago, having been given the assurance that insanity was not contagious,

consented to combat this fixed idea. The mad man was conducted to his study, where M. Alexander Humboldt was accidentally present. When the poor man had received from the mouth of M. Arago positive demonstration, and was convinced of his error, he was, so to say, stupified; afterwards, shedding copious tears, he wept at the loss of his illusion. The object, which was proposed, appeared to have been gained. But M. Trelat and his patient had not passed twenty steps in the way, when the latter turning towards the physician said: 'this is plain, M. Arago has deceived himself, it is I who have reason on my side.'"

We have sometimes occasion to admire the ingenious sublimity which the mad display to interpret the testimony of their senses in favor of the passion that dominates them. This is especially the case in insanities produced by the depressing passions, in melancholia, in the delirium of persecution, examples of which are frequent and remarkable. MM. Drouet and Foville have cited striking facts which they observed during the terrible events of 1870 and 1871, in the hospital of Charenton, and in the Asylum of Vaucluse. Neither the spectacle of daily combats which took place almost under their eyes, nor the tumultuous passing to and fro of trains of artillery, of equipages of ambulance, of convoy of munitions, nor the deafening noise of musketry and canonade could captivate the attention of these patients, and divert them from their delirium. Here was one who called himself by the name of Paul-Emile, and who, designed by God to occupy the throne of France, could only be removed by the electric witchcraft of a secret society; he was convinced that Paris has never been besieged for good; it is fools who are firing canon to amuse themselves, and the real object of all that, "this is to drive him, Prince Paul-Emile, to extremity, and to have a pretext to kill by hunger by reducing more and more the alimentary regimes of the house." There is another, an old captain of the imperial guard, who declares that he is not deceived by all this noise, that France is always in peace, that the emperor is at the Tuilleries, that the communications are free, and if they refuse to convey his letters to his parents, and refuse to enable him to get their replies, it is because they have made common cause with his persecutors: there is no shot in the muskets, and the canonade is a sport invented by some officers of his regiment; the journals

which are brought to him to undeceive him are edited and printed by his enemies, and in a friendly way reproached the physician for being an accomplice in this fraud.

The resources are endless which, even in men not actually mad, passion, when it is very strong, naturally employs to turn from their true sense testimony the most authentic, and interpret them in its favor. Molière has drawn some of the most comic of these effects. The old woman Belise is convinced that numerous lovers are burning for her charms; in vain you give her the most manifest proofs that she is deceived; she turns all in favor of her illusion:

We almost do not now see Damis to come here;
 —This is to show me respect the most submissive.
 Everywhere with sharp words Dorante insults you;
 —These are nothing but fits of a jealous rage.
 Cleonte and Lycidas are both in wedlock bound;
 —It's from despair, to which I have brought their ardour.

According to M. Despine it is the same with memory as with the other intellectual faculties; it continues to function regularly; but the obsession of the delirious idea created by passion brings the mind to the impossibility of believing its testimony. This explains the curious cases where the patient appears to have lost his personality. He does not recognize himself in the past, not because his memory has been affected, but because the moral state, which it recalls, differs so much from that which actually exists, that he cannot establish any connection between the two states of his existence. He declares the state which preceded insanity a stranger to his present state. In reality, the sentiment of personal identity is only enfeebled, and not extinguished. Sometimes it happens that the mad man speaks to himself as to another person not only in the past, but also in the present. One sees a grave objection to the spiritualistic doctrine of the permanence and unity of the *me* under the mobile variety of these modes of existence. We believe that in such cases the explanation is the same; the passion, which is the strongest, has obscured, in the mind of the mad man, the memory of all that has preceded; nevertheless it cannot go to persuade him that he has changed his body; it is another *me* which in the same body has substituted itself for the preceding, and it is without doubt

his body and not his moral person, of which he always and necessarily has consciousness, which the mad man regards as a stranger, and which he calls—that, the other, the not me.

To resume: In this first form of instinctive insanity the intellectual faculties do not appear to suffer alteration. According to M. Despine, Esquirol was wrong to have seen in it a lesion of intelligence. It is however very difficult to admit that a whole group of faculties thus remains sheltered from all injury, and we think, with M. Maudsley, that this immunity is only apparent. If truly insanity is produced by a pathological disposition of the brain which has gravely disturbed the equilibrium of the instinctive faculties, are we required to believe that the mind all entire, with all its essential powers, does not immediately experience from it a contre-coup? Neither perception, nor judgment, nor reasoning, nor memory, can function normally. Suppose in effect, as M. Despine wishes it, that the sudden exaltation of a passion, which nothing can combat, solely constitutes insanity; it must still be that this passion has an object; I cannot have fear, for example, if I have not something to fear. Now, in insanity the object is not real, it is imaginary, it is an idea, and it is the obsession of this idea which gives birth to delirium; but an idea is the product of intelligence; in order that the intelligence may furnish the idea so easily to the passion pathologically excited, it is necessary that it should be predisposed to it, and this predisposition, which does not exist, or exists only with pain in individuals of a sane mind, appears to manifest a morbid state. The intelligence can no more function regularly, since it lends itself so quickly and readily to the exigencies of a passion which has become so dominant, and perhaps the passion only assumes so sudden and complete an empire over it, because the altered intelligence produces only chimeras.

That the intellectual faculties may be affected at the same time with the instinctive faculties, appears to us to result from the most exact interpretation of facts. Some mad men believe that their legs are of glass, and can no longer make any movement for fear of breaking them. M. Despine sees in it a morbid exaltation of of a depressive passion, fear: under the influence of this passion the imagination creates a conception, that of a leg of glass, the

passion is too strong for anything in the mind to be able to combat and dissipate the chimera it delights in, the patient is necessarily convinced that he has a leg of glass. But I ask, why has the imagination suggested this idea rather than another. Is it not more natural and more simple to suppose that some modification has been produced in the nerves which ramify in the leg and in the nervous centres in which those nerves terminate, that in consequence of this modification the patient has no longer in his leg the same sensation as formerly (it is in fact demonstrated that there exists a sense called by some psychologists the organic or muscular sense, by which we perceive all the parts of our body), and that this new and unusual sensation awakens in the mind the idea of a leg of glass? Perhaps even, far from being the cause of the delirious idea, the passion, which dominates it, is itself only the effect. And thus the true cause of delirium will be, in such cases, not the super-excited idea, but the abnormal condition of the organic or muscular sense, a condition provoked by a morbid disposition of a part of the nervous system.

It is possible that in a great many cases, the delirium of persecution had for its principal cause the hallucinations of sight or of hearing which give a terrific character to objects and sounds the most inoffensive. The passion, which, for M. Despine, is the essential condition of insanity, is then only an abnormal condition of the faculties of perception.

What we have just said of the senses is applicable to judgment and reasoning. To judge is to affirm a relation between two terms, and in men who always and invincibly affirm as true an evidently false relation, the faculty of judgment is no longer sound: it is diseased or perverted. The unhappy man, who believes himself to be Adam, judges wrongly. As he is incapable of judging better I have the right to say that his judgment does not function regularly. But at least his reasoning is logical when, believing himself to be the first man, he divests himself in public of his vestments. One may contest there is here any reasoning. Perhaps it is necessary to see in this act only the effect of a hyperæsthesia, a disposition so frequent among the insane. We know that in a number of cases the sensibility of the nervous papillæ, which exist under the epidermis, is so much excited that the lightest touch becomes insupportable. No proof

has been advanced that in abruptly stripping himself of his vestments, the mad man had not wished to preserve himself from a contact very painful. It is even permitted to believe that it was the incipient hyperæsthesia which little by little awakened in him the want to be all naked, and, in consequence, suggested to his mind that he was Father Adam.

We admit, for all that, that the acts of this particular mad man might have been the result of correct reasoning from a false principle; it will still have to be admitted that it was only a sufficiently rare exception. "In fact," says M. Maudsley, whose experience is of great weight in these matters, "it is not exact that a mad man reasons and acts logically from the false premises of his delirium. ... What renders it so difficult to take care of the insane, what constitutes the great anxiety of the officers of an asylum, is in knowing what a mad man thinks; one cannot foresee what he drives at; one cannot know fully his delirium, one cannot follow the operation of this delirium in his mind, and foresee to what acts it will lead. In the mad there is incoherence in the ideas, there is also incoherence between the ideas and the acts. The saying of Locke, that the mad man reasons correctly from false premises, is certainly far from being true in all cases. Frequently the fool reasons *foolishly* from foolish premises; he does not what he should do if his delirious idea were a sane idea, and he does what he should not if this delirious idea were a positive reality; in a word, what is deficient in the fool is health (soundness) of the mind. . . .

"It is impossible," continues M. Maudsley, "for a reasonable and sane mind to dive into the tumultuous depths of the mind of the insane, to grasp all the incoherences of disordered thoughts and sentiments, and to recognise the thread which connects the mental phenomena one with the others, phenomena whose character is to have no bond, no coherence, not to succeed one another in logical relation, to be, not in an order, but in a disorder of association, contrary to all the experience of good sense. If a sensible man can succeed in such an enterprise, it will only be on one condition, the condition, namely, of becoming himself a fool like the fool whose mind he will study; it is then only that he can follow and appreciate the reasonings contrary to all reason."

We believe then that M. Despine has gone too far in affirming that in insanity, the intellectual faculties can continue intact, and continue to function regularly. On principle it is inadmissible that an intimate solidarity exists between the different powers of the mind : if the instinctive faculties are perverted by some pathological cause, the same influence ought to pervert simultaneously the intellectual faculties. In fact, the majority of the examples that are cited are capable of receiving an interpretation which accords with our manner of viewing the subject.

III.

We shall be very brief in our examination of the other varieties of insanity ; the more so as it will be very difficult to establish between them clearly marked distinctions ; they are bound up together, they are blended with one another by almost insensible transitions, and the observations, which are good for the one, are more or less applicable to all the others.

The second form of instinctive insanity is, what Esquirol calls, lesion of the affections. Here we have no more delirious ideas ; a perverted passion manifests itself all alone, and always drives the patient to acts the most immoral, the most criminal. This passion in itself is not very strong, but nothing in the mind of the alienated offering to it any obstacle, it naturally and necessarily becomes all-powerful.

The passions, which urge to acts the most perverse, ought not to be confounded with those which entice men in health to analogous acts. If a man of a sound mind commits a murder, he does so from hate, from vengeance, from cupidity, from jealousy, &c. None of these motives exists in the unfortunate man attacked with homicidal mania : He kills in order to kill. The passion, truly abnormal and pathological, is of that class which is only met with in men who are diseased ; it has for its object the perverse act itself—murder, suicide, incendiarism, theft, &c.

Homicidal insanity and suicidal insanity are the most frequent manifestations of mental alienation ; sometimes even in the same patient the first succeeds the second : this was the case with Henriette Cornier, whose crime keenly moved public opinion about 1825. Of a gloomy and melancholic character she attempted one day to precipitate herself into the Seine ; she was prevented. She could not give any motive for this attempt :

this proves that she obeyed, not one of the ordinary passions of humanity, but a morbid or pathological necessity to destroy herself. One day she was seized with the inclination to murder a little girl; she prayed her neighbours to confide to her their infant that she might take her to a drive on the promenade. Once in possession of the infant, she came up to her chamber, overwhelmed the little thing with caresses, and then cut off her head. It was established that she had nothing against the parents, neither hatred nor animosity. The preparations for the murder lasted only a quarter of an hour; during all this time, she was perfectly calm; she expressed neither pleasure nor pain, and nevertheless knew perfectly what she had done. The crime accomplished, she did not manifest any remorse. In all these characters, it is impossible not to recognize alienation of mind.

The inclination to destroy, which drives to murder without motive, sometimes takes the form of monomaniac incendiarism. This form, M. Despine assures us, is much less grave than the preceding, because it is due not, like other criminal monomanias, to a profound and very little curable affection of the brain, but to a transient neuropathic state. This cerebral state manifests itself between the eighteenth and twentyfifth year, rarely beyond. Frequently the incendiary passion is accompanied with hallucinations in support of the destructive act which it determines: also the individual hears voices which cry to him—it burns, it burns!

One of the perversions the most bizarre from which the affections suffer in insanity is what has been designated by the name of blasphemic monomania. It happens sometimes that patients are irresistibly led to blasphemy. It has been related of a respectable priest who, on being mad, cried with all his might, "cursed be God, the holy Virgin, and the saints." A very pious old unmarried woman, having become melancholic, had such an aversion to the object of her ancient beliefs, that she was affected with convulsive tremblings when she was spoken to about the Church and religious observances; she was then driven to cry terribly; she hurt the priests, cursed the dogmas, the divinity, and gave vent to a furious hatred of religion. It is remarkable that blasphemic insanity is met with only among pious persons and those who are strongly attached to religion in a state of sanity. It is always the same object which continues to occupy

their thoughts; but their disease has perverted the sentiments which this object had inspired in them, and they feel a most violent hatred towards what they loved the most formerly.

In seeking for a psychological explanation of the perversions manifested by this second form of instinctive insanity, we should be tempted to believe that the alteration of the perceptive centres, and consecutively of the faculties, of which these centres are the organ, is here still greater than M. Despine thinks. The hallucination, which results from a disturbance of the parts of the brain in which the optic and the auditory nerves terminate, appears to us to play an important part. One does not contest that the incendiary monomania is frequently accompanied by hallucinations of hearing; it is permitted to think that these hallucinations, in place of being simply the effect of the perverted passion, are their cause, or at least produced at the same time with them. The blasphemic mania has been well explained also by an intellectual perversion giving birth in the mind of the patient the idea that he is damned, that he is become a prey to the devil, and that, consequently, he should blaspheme like Satan. It appears to us, in a word, that under the influence of the same pathological state of the brain, the intelligence and the affections are simultaneously altered.

The third form of instinctive insanity, called by Esquirol lesion of the will, differs from the preceding in this that the perverse impulse of the passion, being all at once sudden and irresistible, does not abolish the moral sense which protests with horror against the shameful and criminal act to which the patient is impelled. A terrible struggle takes place in the mind of the unfortunate man: he has knowledge of the evil deed he goes to perform and of the uselessness of resistance against an impulsion which he cannot master. If he is under the empire of homicidal mania, he supplicates that he should be shut up, that he should be strangled, that he should be brought to the impossibility of yielding to the shocking propensity. "My mother," said a young man of sixteen, cited by M. Calmeil, "you are the best of mothers, and I have loved you with all my heart. Nevertheless since sometime an incessant idea has possessed me to kill you. Take measures that, overpowered at last, I do not accomplish such a great misfortune. Permit me to be bound." Returned to the regiment, it was no more his mother that he thought to kill, it was his

sister-in-law. "Approach," said he to his father, "hesitate not. I am more dangerous than a ferocious beast. Bring a stout cord, bind me, and go, inform M. Calmeil." Admitted in a Lunatic Asylum, he supplicated the director not to consent to his ever going out of it. "At times I may feign to have been cured; never believe me; I should not be allowed to go out under any pretext. When I should solicit for my enlargement, redouble your surveillance; I will only use this liberty to commit a crime which I look upon with horror." We are often reminded of the case of the maid servant who came one day to ask of her mistress the favor of being permitted to quit the house. The mistress, who never had reason to complain of her, inquired as to the motive of this unexpected resolution. She learnt that all the time that the unfortunate domestic undressed the infant confided to her charge, she was struck with the whiteness of its skin, and that she experienced a desire almost irresistible to rip open its abdomen. She was afraid of succumbing to the temptation and preferred to be removed.

The kind of insanity, characterized by remorse, sometimes manifests itself under the form of anthropophagia, blasphemic mania, dipsomania. A Lady, cited by M. Trelat, was seized from time to time with paroxysms of dipsomania which nothing could prevent, neither interest, nor duty, nor her family, and which ended by ruining her. When she would foresee the approach of the paroxysm, she would put in the wine she would drink, the most disgusting substances. At times she would abuse herself thus: "drink then, miserable, drink villainous woman, who forgets her first duties and the dishonors of her family." The passion was stronger than reproaches and disgust.

In these examples, it ought to be avowed, we do not find a trace of intellectual disturbance. It seems well that there has been in these cases nothing else than a morbid exaltation of an evil passion, and it is this which will justify, for these particular cases at least, the theory of M. Despine. Nevertheless it is more natural to see in them still a perversion of the senses, due to a pathological state of the organs. It is possible, for example, that in certain patients, the color, the odour, and the heat of the blood, produce a sort of execrable voluptuousness, which a man in health can never experience. Dr. Maudsley has cited the

case of a clerk who had avowed that one day, without any motive, he assassinated in the fields a little girl of eight years, and chopped her body to pieces. He returned to the study of his patron, coolly related his deed, and in a book where he was in the habit of recording his actions he wrote : " killed a little girl ; it was nice and warm." It seems to us that here the impression produced by the heat of the skin was dominant. The organ of touch, perverted, perhaps inspired that horrible sensation, and determined the murder. The maid-servant, whose history we have just related, was without doubt under the empire of the fascination of the eye and the touch, when the whiteness of the infant confided to her care produced in her the irresistible longing to rip open its bowels. It is clear on the other hand that in the lady related by M. Trelat the organ of taste was not sound, since substances the most disgusting mixed with her drink did not prove repugnant to her. In a word, we propose to explain, at least partially, the cases just related and similar cases by an alteration of the organs of the senses, and of the nervous centres which preside over their functions. This is a hypothesis which we hazard, of course, with the greatest reserve, and which we take the liberty of submitting to the appreciation of competent judges.

We do not dwell upon the two other classes of mental alienation which M. Despine has recognized, and which are constituted, one by the maniac state, and the other by dementia, stupidity, idiocy. In these manifestations which generally mark the last phases of insanity, the whole mind undergoes a growing disorganisation ; the intellectual faculties are visibly affected like the instinctive faculties. The alteration in the functional activity of the brain augments and becomes almost incurable ; lesions are produced in the encephalon, and sympathetically they give rise to grave disorders of other functions and other organs ; by a march more or less rapid the disease is advanced towards a fatal termination.

IV.

We have attempted to determine, from the recent works of MM. Despine and Maudsley, what is the essence of insanity, and what are its psychological conditions. We have seen that

if it is not correct to maintain, with M. Despine, that it is solely constituted by a passion which has become perverted and all-powerful in the mind, the intellectual faculties remaining intact, it is nevertheless the instinctive element, impassioned, which plays the most considerable and the most apparent part in insanity. We were able to conclude that insanity, when it is not the result of an organic hereditary predisposition, or of a purely physiological accident, as in the example of sudden arrest of the secretion of milk during nursing, is almost always due to an exaltation, to an unhealthy super-excitation, of the passionate part of ourselves.

In fact, after hereditary influence, which we regard as the most powerful and the most common cause of insanity, M. Maudsley has not hesitated to give the second place to intemperance and debauchery. Now here we have two most gross and shameful forms of passion which lead us to the gratification of our senses. A fact, cited by M. Maudsley, shows in what formidable proportion intemperance has contributed to produce and develope insanity. "Here is," says he, "what has happened in the asylum of the county of Glamorgan: during the second half of 1871, the admissions did not pass, for men, beyond the figure 24, while they were 47 in the preceding, and rose to 73 in the succeeding half year. In the first quarter of 1873 there were 10 admissions, in the preceding there were 21, and in the succeeding quarter there were 18. There was not corresponding difference in the number of females admitted. Now here resides the interest and the lesson of these observations: the two exceptional periods exactly correspond to the two last strikes in the iron and in the coal industries, which are of great importance in Glamorganshire. The constant diminution proved without doubt that the workmen, not having money to lose in drunkenness and debauchery, were forced during these times to be sober and temperate. The direct result was a marked diminution of insanity."

According to MM. Despine and Maudsley it is hardly possible to calculate the destructive effects of alcoholic drinks upon human reason. Drunkenness acts directly, or indirectly. Directly, it determines in the individuals themselves a sudden access of furious insanity, or leads slowly to dementia, to stupidity, to

idiocy;—indirectly, it gives birth to a pathological state of the nervous system which, without having for the drunkards effects as melancholy, are transmitted to their offspring, and thus predispose them to alienation. It is without doubt rather more to the progress of alcoholism, than to the political commotions and feverish activity developed by the complex wants of modern civilisation, that we must attribute the growing augmentation in the number of the insane in England, in France, and in Belgium. It is from the population of public houses that our asylums are most surely recruited, and from an official report addressed in September 1872 to the Minister of the Interior, we learn that public houses and retail alcohol shops have risen in France from 20 to 100 in fourteen months.*

All passion, which tends to become exclusive, may lead to insanity. For this it often suffices that it be suddenly and violently opposed. Broken affections, disappointed ambition, fall of fortune, are among the most frequent causes of mental alienation. These unforeseen blows excite the passion by destroying its object: all the mental forces were, one may say, concentrated upon a single point; but at the same time there was still equilibrium between the different faculties, he could think, will, act in directions the most diverse to secure the love of his wife, bring up his child, secure his welfare, gain this place, augment riches. These necessities, imposed by want, prevented the passion from employing to itself all the capacity of the mind; the moral life was maintained by the harmonious and simultaneous development of all the functions. All on a sudden

* "In England (not comprising Ireland and Scotland)," says M. Despine, "the ascertained number of lunatics in 1852 was 17,402; in 1857 it rose to 21,334. In France the number of lunatics was in 1818 about 9,000; in 1834, Ferrus counted it at 12,000; in 1875, according to M. Legoyt the number rose to 60,293. In Belgium the number was 4,907 in 1853; it rose to 6,451 in 1858. Nevertheless," M. Despine remarks with reason, "it is not proper to base the figure of insanity exactly upon the figure of the population of our asylums since the commencement of the century. The last figure is very much more considerable than that of the real augmentation of the number of lunatics, because in proportion that insanity has been better known, and that prejudices have disappeared, they have brought to the physician a crowd of patients whom, within thirty or forty years, their families might have concealed, or whom science might not have classed with the insane."

the object of the passion misses ; the faculties, no longer having their habitual object, cease to act or act only with languor ; the passion feeds upon itself, is kept up and heightened under the influence of a pathological activity of the brain ; little by little it draws to itself all that remains of mental energy : the intelligence no longer thinks but of it ; the will has no longer any power but for it ; they are henceforth at its mercy.

Deviated and perverted, the noblest passions can give birth to insanity. When the religious sentiment degenerates into exaggerated and puerile scruples, from exclusive and ceaseless terror of the punishments of hell, it has the risk of engendering religious monomania, one of the most frequent forms of mental alienation. At the bottom of all these passions, it is not difficult to perceive a monstrous exaltation of human egoism. Perhaps it will not be rash to advance that it is for loving himself too much, for pleasing himself too much, for making himself the unique object of all his activity, that man, I mean rational and free man, by a just and terrible retribution, is exposed to become a stranger to himself, *alienated* (from himself). What is intemperance, the fertile mother of insanities, but a habit of low voluptuousness, that is to say, of sensual egoism ? What are the blind and disordered affections, such as ambition, love of gain, all the passions, which suddenly disappointed, so often ship-wreck reason,—what are they if not the most refined forms of egoism ? Who knows, if all the varieties of the delirium of persecution are not the morbid manifestations of an immense pride ?

Does it follow then that man does not become insane except by his faults, and that according to the doctrine of Heinroth, mental alienation never takes place except as the consequence and chastisement of his sins ? No ; because most frequently insanity is transmitted : whoever is thus affected with it, has received it all prepared, so to say, in his brain. There is what M. Maudsley calls the *insane temperament*, and whatever precautions the unfortunate man may take in order to escape from the hereditary fatality, the least shock will cause his reason to totter, and nothing will prevent it from being carried in a tempest of fury. The only remedy here according to M. Maudsley, will be the legal interdiction of marriage between individuals in whom similar dispositions will be medically established. But except in cases of hereditary insanity,

we may maintain without paradox that a good intellectual and moral hygiene surely wards off all danger. The study of the sciences, by the perpetual novelty of objects which it offers to the thoughts, by the ever renewed efforts which it demands, is one of the most efficacious preservatives. "It is very rare," says M. Maudsley, "if even this ever happens, that a man becomes insane by excess of intellectual activity, and if this is not accompanied by a disturbance of the emotions; it is when the sentiments are profoundly engaged that the stability of the mind is most in danger. When we are told that a man has lost his reason, or has been killed by excessive intellectual work, the fact is that in nine cases out of ten, if not in all the cases, the real causes of the disaster were anxieties, fears, deceptions, envies, jealousies, sufferings of exaggerated self-love or analogous chagrin; now these causes have all their point of departure from an excessive personal sentiment. The depressing passions and thoughts of the same nature, when they are brought and excited into activity, require a large expenditure of nervous force. If then the mind has not acquired by culture the power to divert the attention from these ideas and fix them upon others more salutary; or if favorable external circumstances have not acted contrary to this state, and helped the individual to do what he himself is too feeble to accomplish the definitive result is inevitable, the nerves break down.

But the best preservative is still the firm and constant observance of the moral law. The supreme obligation of man is to harmoniously develop all the powers of his being, and to carry them to the highest point of perfection of which they are capable; this is, in other words, to tend to perfection. Towards that end he ought to love and seek those things in proportion to the perfection which his reason discovers in them. No creature being perfect, he ought never to love any one here below, himself included, with an exclusive and absolute love. He should not abolish the humane affections, he should not use force in the sterile effort to annihilate all the passions and detach them from himself; because this will be contrary to the order of nature; but without becoming a stranger to this world, he should accustom his thoughts to look up to the highest. He should build in his reason a temple where the tumults of the senses will not come

to destroy his peace, where the disgraces of fortune will not await it with deadly blows. To purify and develope the reason, to secure its empire by a will always on the alert, is not this the best means never to lose it?

Ludovic Carrau.

NOTE BY THE EDITOR.

In the natural gradation of things, mind or that which is conscious of itself and of the external world, must occupy the highest position in the universe; and the science of mind, or psychology, in its widest sense, must form the top of the pyramid of knowledge. The human mind is the highest type of mind in this world, and it is natural to think that the study of its phenomena would alone lead to the construction of psychology. This would be so, at least there would be no other alternative basis of investigation, if man alone had mind. Hitherto psychologists have assumed this to be the fact, at least have acted as if this was the fact. But the inferior animals display the attribute of mind, in much inferior degree it is true to that of man, but in sufficient degree to leave no doubt upon a careful observer that the attribute is indeed that of mind. Psychology, therefore, can only be properly built and perfected on the broad basis of mental phenomena, wherever and however manifested. Besides, in order to be able to unravel the very complex phenomena of the mind as displayed in man, it is necessary to view those phenomena in their elementary forms in the inferior animals, and to view them as exaggerated, enfeebled, or perverted by disease. We know what light comparative anatomy and physiology have thrown upon human anatomy and physiology, and what light morbid anatomy and pathology have thrown upon healthy anatomy and physiology, and analogy leads us to expect the same results from comparative and morbid psychology. Very properly therefore has the writer of the article, which we have translated above, pointed out the importance of the study of insanity from a psychological point of view. "A good theory of insanity is the indispensable counter-proof and the most certain verification of a good theory of the faculties of the mind. The physician can never comprehend insanity, if he has only vague notions of the psychology of man in health; nor can the psy-

chologist can have possession of an experimental and complete science of the *me*, if he cannot render an account of the deviations and strange perversions to which the powers of the mind are subjected in insanity."

There is another line of investigation which promises a rich harvest of results to those who will but pursue it, but which has hitherto been neglected or lost sight of altogether. This is the study of mental phenomena in all their various stages of development from infancy to adult age. Just as comparative anatomy has shed light upon human anatomy, so we know that developmental anatomy has shed light upon the anatomy of the perfected or adult animal. The same ought to be, and must be, the case with psychology. This line of investigation is attended with peculiar difficulty. The manifestations of the young mind are not all pure and genuine. They own to a large extent domestic and social influences, including the very powerful influence of language, as their originators. Hence it is necessary to understand the part these play in developing the mind, in order that the genuine tendencies of the mind itself may be discovered.

The discovery of the physiological basis of mental phenomena, has added immensely to our powers of observation and analysis of these phenomena, in fact, has armed us with a new method of investigation altogether. To Gall is due the merit of this discovery. True, before him, the fact was recognised that the brain was the organ of the mind, that the nervous system was the instrument through which the phenomena of the mind were manifested. The fact, however, had too much vagueness about it to be useful. Physiologists were quite content with it, and it remained, in consequence, for a long time a barren and a sleeping fact, till Gall awakened it into investigating activity, and by the power of his genius made it fruitful of research. If the brain was the organ proper of the mind, was it every part of the brain that performed indifferently every function of the mind? The mind might be an indivisible essence, but its phenomena were clearly referrible to distinct heads, which bespoke distinct and different powers or faculties. Did these powers or faculties act or were manifested through any and every part of the brain? Or had they special seats in special parts of the encephalon? Differentiation of function and organ becomes greater and greater as we

ascend the scale of animated beings, and in man in every part of his economy this differentiation is seen in its highest perfection. Is the highest organ of his body, the brain, an exception to this law, this characteristic of superior organisation? Thus interrogated Gall within himself, and utterly disbelieving that such an anomaly could exist he applied himself to work, and succeeded in diving deeper, than was done by physiologists before his time, beyond the surface of the fact that the brain was the organ of the mind. The brain has thus been found, not to be a homogeneous mass, every part of which was concerned in the manifestation of all mental phenomena without distinction, but a congeries of organs nicely differentiated and exquisitely ordered and arranged to perform most subtle functions.

It is a matter of regret that so few physiologists should have followed the path chalked out by Gall, and that the generality of those well qualified to extend researches inaugurated by him, should still ignore their great merit, and should, in consequence, still lose themselves in vague and vain wanderings. So great, indeed, has been the opposition to Gall's system, that even a qualified belief in it is considered a reproach, and an ignorant and unexamining disbelief of it is considered a merit. Nevertheless one cannot but see the utter absurdity of the opposition. This is like the insane opposition to the system of Hahnemann. But just as in the latter case, so in the former, orthodoxy is coming round, and affording substantial testimony to the probable correctness of the despised doctrine. The labors of Turner and Ecker have established or rather discovered order and regularity in the arrangements of the convolutions where older anatomists had seen only disorder and irregularity. Féré has shown that there is relationship between the convolutions and the external configuration of the cranium. And the recent researches of Hitzig and Ferrier, though still directed towards discovering cerebral seats of various muscular movements, and of the senses, point unmistakably to localization of function in the cerebral hemispheres and ganglia, and lead to the hope that similar localization of psychical functions will be discovered, and perhaps in some cases rediscovered, if research were directed towards that end.

So that now, without any reference to Gall's system, one may entertain the belief that the primary powers or faculties of the

mind have their special centres in the brain ; and that just as in the case of other parts of the body, one or more of these centres may be diseased, while the others may remain unaffected. The duodenum and the ileum are not only contiguous, but continuous, and yet we may have, and often have, disease of the one and not of the other. The same with regard to the pathological relationship of the small and the large intestines. We know further how one of the structures of an organ may be affected without the others. Thus the mucous, or the muscular, or the serous coat of the intestines may undergo inflammatory action alone, without involving its close neighbours. We know also how the pleura may be affected without the lung suffering along with it, and *vice versa* ; and how the air-cells may be affected without the contiguous bronchial tubes suffering simultaneously.

Each elementary structure has, by virtue of its peculiarity, its own territory as it were, guarded from that of its neighbour, and having its own privileges and immunities and liabilities in respect of morbid and morbid influences. The same may be said of each system of structures constituting an elementary organ, and so on of complex organs and of systems of organs.

Bearing in mind this pathological law, and the probability amounting to certainty, that the brain is differentiated into distinct centres for the carrying on of distinct psychical functions, we shall have no difficulty in believing that there may be disease of one or more of these centres, to the exclusion of the rest ; in other words, there may be insanity affecting only this or only that, or only a few faculties of the mind, and not all of them. We do not say that there might not be general insanity involving all the powers of the mind. What we maintain is that there may be and often is partial insanity, and that we do not see much force in the argument advanced by M. Carrau that, "if the instinctive faculties are perverted by a pathological cause, the same influence *ought* to pervert *simultaneously* the intellectual faculties."

THE LIGHT WHICH HOMŒOPATHY MAY THROW UPON ETIOLOGY OR THE CAUSATION OF DISEASE.

The importance of etiology or of a knowledge of the causes of diseases cannot be overrated. So great is this importance, that it has passed into proverb that a knowledge of the cause of a disease is half its cure. Removal of the cause, or, when the cause is irremovable, removal from the cause, generally leads without any other treatment to removal of the effect—disease, at least, must be one of the steps, if not the first step, towards removal of the effect.

A consideration of the etiology of disease reveals the following facts:—

(1.) Diseases are produced by mechanical causes. The very first effect of a mechanical cause must be of a mechanical character in the shape of solution of continuity, external or internal, such as rupture or fracture. But as this effect takes place in a living organism, vital disturbance must immediately ensue, and lead to disease.

(2.) Diseases are produced by chemical agents. A similar remark to, that made under the first head may be made under this head. Originally of a chemical nature, such as definite combinations of the cause with the chemical components of the tissues, the chemical lesions, besides producing solution of continuity by destruction of tissue, give rise to disturbance of vitality or disease, more rapidly even than mechanical lesions, owing to the facility which chemical agents have of entering the circulating current, and of spreading from part to part.

(3.) Diseases are produced by the action of imponderables such as light, heat, electricity, and magnetism. These agents produce disease directly by interfering with the vital and chemical processes that are going on in the organism. Their action is of a profound character, and often eludes observation. In fact the action of these agents has hardly been studied by the physician. Perhaps an exception may be made in the case of heat, but the morbid actions of even this universally felt agent have not been investigated with any degree of scientific precision. Considering the universality of these agents, their presence or

development in every operation without or within the economy, we may well understand how powerful and pervading their influence must be upon that economy, and how their excess or deficiency may disturb the equilibrium of its various parts.

(4.) Diseases are produced by the development of inferior organisms in the interior or exterior of the organism. The germs of the inferior organisms are introduced into the system either from the air that we breathe, the fluids that we drink and bathe in, or the food that we eat. Or the organisms themselves may migrate from the soil or from other animals. In no case have they been found to be generated in the system itself, except from germs coming from such external sources. This part of etiology, though not strictly modern, has received much light from modern research. Many diseases, which were puzzles before, have now their causes traced, and their prognosis and treatment better understood by the light thus received.

(5.) Diseases are produced by the influence (attractive or otherwise disturbing) of cosmical bodies. That cosmic bodies exert a morbid influence upon the human constitution is an old belief, as old almost as man himself. But the fact underlying the belief had become so absurdly exaggerated, and mixed up with such incredible superstitions, that it had ceased to be believed in altogether by the learned, in fact, up to the present day it is considered a merit to reject it as a relic of human credulity and hasty induction. Nevertheless the fact is a fact, and sober minds are at least agreed so far as not to reject it without examination. And in spite of the risk of ridicule coming upon them, there are to be found physicians who believe that cosmical bodies do exert a morbid influence upon the human constitution, though not to the extent held by astrologers of old. And what wonder that they should do so. We know they all exert an attractive influence upon everything in our earth, and chiefly upon fluids. Very recently the planets, and especially the large ones, when near one another, have been found to exert an influence over the sun-spots themselves, and the sun-spots have been found to exert a variety of influences upon the earth, chiefly of an electric and magnetic character. Where is the absurdity to think that the planets and the sun may exert some influence, direct or indirect, upon the body of man which is a part and

parcel of the earth, and which is subject to be disturbed by disturbances in the various conditions of the earth? This part of etiology has to be constructed. The work must be laborious, but is well worth any amount of labor that may be bestowed upon it.

(6.) Diseases are produced by the excessive use of some organ or organs, leading to loss of energy. Numerous instances may be cited of disease produced in this way. As illustration we may just mention the eye, the brain, and the locomotive system as the organs which suffer most from over-work.

(7.) Diseases are produced by hereditary transmission. There is scarcely an anatomical or a physiological peculiarity which is not transmissible from parent to offspring even into many generations. And diseases, as abnormal conditions, or modifications of normal anatomy and physiology, are no exceptions to this law. With respect to some diseases, this transmission is too patent to be overlooked. These are syphilis, tuberculosis, scrofulosis, insanity, cancer, &c. There are others which are not observed to be so transmitted. And in respect of notoriously transmissible diseases, it is to be noted that their transmission is sometimes interrupted. These facts show that there are other laws which govern the development of the embryo in utero, than the law of hereditary transmission. Holding to this last, the cardinal law, the deviations, the modifications and the apparent suspensions thereof, may be traced to their own distinct causes, and thus the other laws may be discovered. The whole subject is worthy the most careful attention of the physician, not only with a view to elucidate the causes of disease, but also to throw light on the darwinian hypothesis.

(8.) Diseases are produced by contagion and infection. So far as cases of diseases produced by contagion and infection have been searchingly examined, it has been found that their production has been due to growth and multiplication of the disease-germs of one patient in the blood or tissues of another transmitted by actual contact, or through some intervening medium as the air, or bed-clothes, &c. These diseases, at least, the great majority of them, come under the fourth head.

(9.) Diseases are produced by causes which cannot be traced to either of the preceding sources.

It must have been evident from what has been said above that the discovery of the cause or causes of a disease is not so easy as is ordinarily imagined. The offhand manner in which practitioners attribute diseases to this or that cause, betrays either their profound ignorance or their impatience, and it cannot be too strongly condemned. In spite, however, of all the attention that can possibly be bestowed upon a case, and in spite of all the knowledge that can be brought to bear upon it, the physician may fail to discover the true cause. The difficulty may be due to the multiplicity of causes that are in operation, and which we have attempted to generalise under the preceding heads; or it may be due to the fact of the actions of some of them being ill-understood and ill-defined.

But assuming that all the difficulties have been overcome, there will still remain a residuum which will fall under the last head. In these cases, our obvious duty is to endeavour to discover if there are other causes of disease than those already enumerated. But how is this to be done? We can only proceed from the known to the unknown. Are there any positive data to help us in the difficulty? We think there are, and they are to be found in cases of poisoning. Toxicology is properly speaking a branch of pathology. The phenomena of poisoning are no other than symptoms of disease. "There exists," says Claude Bernard, "so remarkable an analogy between the symptoms of legitimate diseases, and the disorders from the introduction of toxic agents into the economy, that the effects of poisons may, up to a certain point, be considered as the most perfect specimen of morbid actions, which can possibly be selected as a type."

Toxicology is the first necessity, the very foundation of homœopathy. Homœopathy, in fact, may be said to be applied toxicology. And consequently toxicology has, under the guidance of homœopathy, received an extraordinary, though properly speaking, no other than its legitimate, development. Before the advent of homœopathy toxicology was only the science of accidental and violent poisonings. Since that advent voluntary and slow poisoning has been included within its domain. The provings of homœopathy are no other than slow, voluntary poisonings, with a view to elicit all the possible health-disturbing actions of substances which, though not all of them, violent poisons in the

ordinary sense of the term, are true poisons in the sense of deranging health.

Homœopathy has, by instituting systematic provings, revealed the following general facts :—

(1.) Material substances, derived from the mineral, the vegetable, and the animal kingdoms, are capable of producing diseased conditions in the healthy organism, when introduced into it either by absorption through the mucous membrane and the skin, or by injection into the tissues.

(2.) Such substances are capable of curing similar diseased conditions existing in the organism, when not produced by the self-same substances.

(3.) The therapeutic effects, and sometimes the physiological or pathogenetic effects are capable of being produced by quantities of those substances, not infinitesimal indeed, but well-nigh so compared with appreciable quantities.

(4.) That one substance may be the physiological antidote of another substance, when it is capable of producing similar abnormal conditions in the organism, the antidotic power being in proportion to the closeness of their pathogenetic effects.

A long list of substances has now been given to the world, with the pictures of their health-disturbing actions minutely and faithfully drawn. And other similar substances are in course of discovery. In reputed cases of poisoning, from symptoms alone without the aid of chemical and other evidence, we may, in some cases certainly, in others approximately, trace the effects to their causes. In cases of disease which cannot be traced to the causes which are ordinarily known to be productive of morbid conditions, why may we not avail ourselves of the light of homœopathy? The human organism, as indeed every animal organism, is acted upon by every substance in a fixed and definite manner. Only the complexity of its structure and the multiplicity of substances which enter into its composition, necessitating complexity in the actions themselves, may mask their appearance, and render their recognition difficult. Hence the apparent anomaly of the same organic phenomenon being produced by different causes. But the anomaly has vanished whenever it has been subjected to a close scrutiny. So that there is no longer any doubt of the fixed and definite nature of

the action of each distinct substance upon the human organism. And to attempt to argue from the action to the agent would be perfectly legitimate and scientific. Of course we would deprecate all hasty conclusions. All that the facts revealed by homœopathy can do is to put the inquirer on the right track. He will be enabled to suspect the presence of certain substances with the pathogenetic symptoms of which, the symptoms of a case or cases of disease are found to agree. He will not be justified in asserting positively without further evidence that a case of disease, or an endemic, or an epidemic, is actually due to the deleterious action of a particular substance, or a combination of substances, until he has actually proved its presence in the soil, or in the food, or in the water, or in the air.

The line of inquiry here suggested will, if pursued with all the caution necessary for the discovery of truth, lead ultimately to the clearance of the whole subject of etiology. Though we have generalised under distinct heads all the possible causes of disease, it is not to be understood that the perturbative influences of the various agents that come under those heads have been ascertained in all their detail. Far from this, the operations of a large number of them upon the human economy are yet undetermined, and even the reputed operations of most of them rest on doubtful grounds. The whole subject therefore requires a thorough revision, and this cannot be effected better than under the guidance of facts brought to light by Homœopathy. For what better light can we possibly have in conducting an inquiry into the causes of diseases or morbid conditions of the system than the positive knowledge, derived from actual experiments, of definite morbigenic actions of known substances? It is in this way that a known substance may be ascertained to be the real cause of a disease where its very presence was not suspected, and where other causes were only imagined. And it is in this way that a process of elimination would be set up, whereby new causes may be discovered, and the actions of known ones more clearly defined. This is not a new process in science. It is by such a process that the existence of new substances have been demonstrated in the earth, and of known substances suspected in the sun, stars and nebulae. What the lines in the spectrum are to the physicist, the symptoms of disease are to the physician.

Gleanings from Contemporary Literature.

ON THE TRANSLATIONS OF HAHNEMANN'S PATHOGENESIES : WITH A PLEA FOR A NEW : ENGLISH VERSION.

By Dr. RICHARD HUGHES.

WHEN Hahnemann first (in 1805) issued a collection of provings, he clothed it—as its name *Fragmenta de viribus medicamentorum positivis* indicates—in a Latin dress. It thus became the property of every educated physician throughout the world, and needed no translation. But when (in 1811) he began to re-issue these provings in a more enlarged form, he saw good to depart from his former practice. From this time forward all his pathogenesies were published in the German tongue: we have them as the *Reine Arzneimittellehre* and the *Chronische Krankheiten*.

Consequently, as his method came to be practised in other countries, it became necessary to render the pathogenetic materials he had furnished into the vernacular of each. This has been done in France, America (for the English-speaking peoples), Spain, and Russia. Of the two latter versions I can say nothing; nor have they any direct interest for the readers of this paper. But an estimate of our English translation, with a view to inquiry whether we should be content with it, or should endeavour to compass another, is a matter of considerable importance. And, as most of us read French, it is worth knowing what sort of reproduction of the Hahnemannian pathogenesies we have extant in that language.

1. But, before I speak of the French and English versions, I must say something about a work very little known, viz., a rendering of part of the *Reine Arzneimittellehre* into Latin. In 1826 there appeared at Dresden a volume having on its title-page

"*Samuelis Hahnemannii Materia Medica Pura, sive doctrina de medicamentorum viribus in corpore humano sano observatis, e Germanico sermone in Latinum conversa.*" Its joint editors were Drs. Stapf and Gross, Hahnemann's well-known and cherished disciples, and Earnest George von Brunnow. It contained the medicines of the first volume of the original work, as they stand in the second edition, viz. *Aconite, Arnica, Belladonna, Cannabis, Cocculus, Cyna*, (sic), *Dulcamara, Mercurius, Moschus, Nux vomica, Oleander, Opium*. In 1828 appeared a second volume of the same kind, including medicines from the second and third volumes of the original, viz., *Arsenicum, Bryonia, Ferrum, Helleborus, Ignatia, Magnesia, Pulsatilla, Rheum, Rhus, Scilla*. With this, unhappily, the undertaking came to an end.

I have examined these volumes (they are in the library of the British Museum) with much interest. The translation seems accurate and perspicuous. A vocabulary of the German terms used by Hahnemann to

denote the various shades of sensation, with the Latin equivalents chosen or invented for them, is prefixed. As an explanation is also given by these well-informed disciples of what the master exactly meant by each term, this table is of great value, both to students and to intending translators. The editors have rendered Hahnemann as he stands, with one exception. His practice, in the first and second editions of the *Reine Arzneimittellehre*, was to arrange his own symptoms first, and then the "observations of others," including in the latter both the provings furnished to him and the citations he collected from authors. In the Latin version it seems to have been considered that the provings of the master's pupils, made under his direction, were worthy of being incorporated with his own, as homogeneous in character therewith; while the symptoms taken from recorded observations of poisoning and over-dosing might stand by themselves.

2. I will now speak of French translations. These have all been made by a Mons. A. J. L. Jourdan, membre d'Académie Royale de Médecine. From his prefaces it would appear that he was not a homœopathist himself, but did his work in the interests of general literature and science. He began with the first edition of the *Chronische Krankheiten*, his version of which appeared in Paris in 1832. In 1834 followed the *Reine Arzneimittellehre*, translated from the third edition of the first two volumes and the second of the rest. In 1846 he published his rendering into French of the second edition of the *Chronische Krankheiten*, thereby completing his work. The first and third are reproductions of the original just as it stands; but his "Traité de Matière Médicale, ou de l'action pure des médicaments homœopathiques" re-arranges the medicines after the alphabetical order of their French names. In all three the prefaces and notes are given in full; each symptom has a paragraph to itself, and the authorities are affixed. The references, however, for the symptoms cited from authors are—save in the few earlier medicines of the *Reine Arzneimittellehre*—omitted.

I do not know what is thought by experts in the French and German languages of the accuracy of this translation. So far as my own knowledge enables me to speak, I can say that it has not disappointed me when I have consulted it. The omission of the references of the cited symptoms is of little consequence, as any one who wished to follow them up would consult the original. On the other hand, the reproduction of the whole series of medicines of each work, and the full presentation of the prefaces and notes, are features of great value, as will be better understood when we come to speak of the deficiencies of our English version in these respects.

3. There had been no translation of Hahnemann's pathogenesies into English until 1846, when there appeared in New York, from the pen of Dr. Hempel, five volumes of the *Materia Medica Pura*, and five of the *Chronic Diseases*. This version has preoccupied the field, and has continued to be the only one whereby English students could read the master in their own language.

The medicines of the *Materia Medica Pura* are herein re-arranged according to the alphabetical order of their Latin names, beginning with *Acónite*

and ending with *Veratrum*. The third edition of the original has been used for those of Hahnemann's first volume, but not, as might have been expected, for those of his second also. All names of authorities are omitted, so that for the medicines where the symptoms from all sources are thrown together we have no clue whatever to their origin, and in no case can we distinguish between the results of provings and the observations cited from authors. The pathogenesies in which Hahnemann has separated his own symptoms from those contributed by others are variously treated. Sometimes (as with *Bryonia*) the latter are made to follow the former in each division of the schema, enclosed in square brackets for distinctness. Sometimes (as with *Bismuth*) the two sets of symptoms are rendered successively, as in the original. Sometimes (as with *Argentum* and *Camphor*) they are thrown together in one series without distinction. The symptoms are printed continuously, and divided into paragraphs according to Dr. Hempel's classification of the schema.

From the list as thus presented to us we miss a number of medicines belonging to the original, and receive in explanation the following note :

"Several of the antipsorics had been originally introduced by Hahnemann into the *Materia Medica Pura* ; at that time Hahnemann had not yet discovered the antipsoric nature of those remedies. Afterwards, when this discovery had been made, those antipsorics were tried more minutely, and together with the other antipsorics were published as a separate collection under the name of 'Chronic Diseases.' The first proving of these remedies contained in the *Materia Medica Pura* has been omitted in the translation, and only the results of the second proving have been given to the American reader, which are much more complete. The medicines which have been thus proved over again are the following :—*Dulcamara*, *Causticum*, *Arsenic*, *Digitalis*, *Aurum*, *Guaiacum*, *Sarsaparilla*, *Sulphur*, *Calcareæ acetata*, *Muriatic acid*, *Phosphoric acid*, *Manganum*, *Carbo*, *Colocynthis*, *Stannum*."

I give this passage just as it stands, though it does not raise our expectations as to Dr. Hempel's power of writing English. It has, however, graver faults than this. Its list of medicines omitted because of their reappearance in the *Chronic Diseases* is imperfect ; it should have included *Conium* and *Hepar sulphuris*. Its statement that these medicines had been "tried more minutely," "proved over again," is very incorrect. Two of them (*Dulcamara* and *Guaiacum*) have but a dozen or so more symptoms in the *Chronic Diseases* than in the *Materia Medica Pura* ; and one (*Stannum*) has as many less. *Calcareæ acetica* was not "proved over again," but its symptoms were incorporated with those obtained from *Calcareæ carbonica*, and distinguished by a sign, which Dr. Hempel quite as often omits as inserts. Nor is it true of the remaining medicines that they have been re-proved, so that their previous pathogenesies could be considered obsolete. The great majority of the additional symptoms given to them in the *Chronic Diseases* were furnished by Hahnemann himself, from his observation of their (supposed) effects on the patients who were taking them. He included them in the latter work for the sake of com-

pleteness; but he obviously meant it to be used by those who already had the *Reine Arzneimittellehre* in their hands, for he shortens his prefaces, omits his notes and (very frequently) his references to the observations cited from authors, and even (as Dr. Wilson has shown)* sometimes leaves out those notes of time after taking the dose and day of proving which he elsewhere affirms to be so important as *duta*.

I must think, then, that Dr. Hempel establishes no justification for omitting these medicines from his translation of the *Materia Medica Pura*; and that his work is materially injured by their removal. English readers have little notion of what *Sulphur* and *Stannum* (to mention no others) were in their original form.

Besides these omissions, which are intentional, the pathogenesies of *Ferrum* has dropped out, doubtless by accident.

But I have now to speak of graver defects, compared with which those already mentioned are insignificant. The duty of a translator varies according to the work on which he is engaged. If the latter be a poem or other artistic composition, his aim must be to give to the foreign reader as nearly as possible the same æsthetic impression as would be received by the author's own countrymen. Hence he is justified in taking a good deal of liberty with the words and structure of the original, so long as he preserves its actual meaning. It is otherwise, however, with such a work as the *Materia Medica*. Here everything depends upon exactness of expression and fulness of detail. Style is (comparatively) no object; the one thing the student needs is the faithful reproduction of the words of the original, so that he may be at no disadvantage as compared with those who read the latter. The two, original and translation, ought to appear if placed side by side as doubles one of another.

The question whether Dr. Hempel has carried out these obvious principles was raised by Dr. Wilson in the *Monthly Homœopathic Review* for 1862-3, and answered in the negative. I think that any who read his papers and the controversy they provoked, together with the comments of this Journal in the corresponding volumes, must admit that his case is abundantly made out. The most serious blot he has hit is Dr. Hempel's wholesale omissions. Fourteen medicines are mentioned in which the number of symptoms left out has been ascertained; they range from 13 in the case of *Aconite* to 472 in that of *Phosphorus*. Considerable evidence is moreover adduced in proof of carelessness in the rendering of those symptoms which are preserved. These omissions and errors are indeed mainly discoverable in the later medicines of the *Chronic Diseases* when the translator may presumably have become weary of his gigantic task, and yet have been under publishers' pressure to complete it. But though such explanation may palliate his fault, it does not repair our loss.

My own sense of deficiency of Dr. Hempel's translation has been mainly excited by the renderings of Hahnemann's introductions and notes to the several medicines, for which I have often consulted his volumes when the

original has presented difficulties to me. I have so often been disappointed by the curtailment, omissions, and obvious mistranslations I have encountered that I have ceased to have any reliance on his version being a faithful exponent of the original, and never venture now to quote Hahnemann as given by Hempel lest I should misrepresent him. When I put this together with the omissions and errors noted by Dr. Wilson, and the faults of the whole presentation of the work I have already mentioned, I cannot but come to the conclusion that we do not really possess Hahnemann's *Materia Medica Pura* and *Chronic Diseases* in the English tongue.

The inference must surely be that a new translation is imperatively needed, and that forthwith. Some dozen years ago a good deal was said about a new version from Dr. Quin's pen as being in preparation, and it was even advertised as to be published shortly. Nothing more has been heard of it; and the long retirement of Dr. Quin from public duties gives little hope of its accomplishment. Again, it is true that the pathogeneses of Hahnemann are being translated afresh by Dr. Allen for his *Encyclopædia*; and any one who desires to have a faithful rendering of any given symptom may depend on finding it there. But Hahnemann's pathogeneses are necessarily in this work incorporated with others; and its plan excludes his prefaces and introductions, and (to a great extent) his notes. Since, therefore, we can neither expect from the former quarter nor receive from the latter the thing we want, there is nothing for us but to undertake a new version for ourselves.

For such a work I earnestly plead; and think that England and America—as equally concerned—might well co-operate in the task. There are on both sides of the Atlantic masters alike of German and English from whom any translation would be received with implicit confidence. I myself have no place among these; but there is one element of the work which I could and would gladly supply. Some five thousand of Hahnemann's symptoms are quotations from authors—English, Latin, French and Italian as well as German. It is easy to see what confusion is made when these are retranslated into English from Hahnemann's rendering of them into German. The examination of their originals which I am carrying out for Dr. Allen will enable me to supply all these quotations, if in English, in their own words, if in Latin, French, or Italian, in direct translation; besides the verification, illumination, and correction which I can give them from the same sources. I should be ready to perform this part of the work; and if two or three competent scholars from England and America would sustain the main undertaking, we might have in a year or two an English version of at least the *Materia Medica Pura* of which both countries would be proud.

I should feel grateful if any of the American journals would reproduce so much of this statement and appeal as they might think necessary.—*The British Journal of Homœopathy*, January 1877.

Correspondence.

RETINITIS PIGMENTOSA.

To the Editor, *Calcutta Journal of Medicine*,

SIR,—I am particularly interested in cases of Retinitis pigmentosa which, in my opinion, requires elucidation in many points.

Dr. Macnamara, in his *Manual of Diseases of the Eyes*, (pp. 400 & 401), says as follows : Retinitis pigmentosa is said to be most commonly met with among the offspring of persons nearly related to one another, but this can hardly be the cause among the natives of India, as they are most scrupulous in observing the restrictions they place upon the intermarriage of relatives ; and yet I have seen some twelve or fifteen instances of this disease among my native patients within the last twelve months. * * I am disposed to look upon the disease as a result of inherited syphilis. I have never been able to refer these symptoms to the effects of any of the so-called inflammatory changes ; the disease seems to me to be one of a degenerative character, progressing very slowly, and often becoming stationary for years. The only facts which, in my mind, are opposed to this view of its relation to syphilis are, that I have not noticed the notched teeth, nor have I seen the affection in more than one member of a family ; and lastly, the disease does not seem to be influenced in the least by any treatment with which I am acquainted. "

Dr. Macnamara's remarks on the origin of this disease are perhaps sufficient for the general outlines of a *Manual*, but more additional information is required for those who take a special interest in this subject. From the description it is not quite clear whether Dr. Macnamara refers the origin of the disease exclusively to hereditary syphilis, or also to acquired syphilis, although the notched teeth (Hutchinson), mentioned above, would point to the former view. To me it appears that this particular matter requires further research and confirmation.

Galesowsky, too, often found syphilis to be the origin of the disease, and the same observation was made by Manuhardt and Kugel in Western Asia ; but the assertion does not hold for Germany.* Manuhardt says that in Constantinople he discovered in no case consanguinity of the parents to be the origin.† Whilst, therefore, Macnamara, as for the natives of India states that hereditary syphilis is the cause, the other authorities attribute the disease to secondary, that is, acquired syphilis. The symptoms, however, are sufficiently described neither by the former nor by the latter. Dr. Macnamara's cases were, it appears, purely typical form of Retinitis pig-

* This agrees with observations made by me in France, England, and Italy.

† (Leber anomale formen der Retinitis pigmentosa von Th. Leber-arch. I. o.)

mentosa because, in describing the symptoms of the typical form he does not mention whether any of the cases observed by him exhibited deviations from the rule.

The typical form of Retinitis pigmentosa is characterised by the well known pigmentation of the retina, the concentric contraction of the field of vision whilst the central sight remains for a long time intact; the hemeralopy; the symmetrical chronic course and the causes of consanguinity of the parents and the transfer from parents to children which frequently are to be found. Besides these typical cases of Retinitis pigmentosa there are numerous others met with, which contain only a part of the characteristic symptoms whereas they deviate in other ones, but yet show clearly its relation to the Retinitis pigmentosa by those symptoms they have in common. Leber* describes these cases as anomalous forms of the Retinitis pigmentosa and uses the principal ones for the establishment of the under-mentioned rules, by means of which he places them in well marked outlines. I wish this classification to be looked upon as a fundamental one in order to gain destined questions and answers.

1. *Typical Retinitis pigmentosa.*

2. *R. p. with typical contraction of the vision and anomalous appearance under the ophthalmoscope.*

(a.) *R. p. without pigment, which passes through every possible transition to the common form.*

(b.) *R. p. with disseminated atrophic spots of the choroidea.*

3. *R. p. with a typical report by the ophthalmoscope and anomalous form of the contraction of the vision.*

(a.) *R. p. with a predominant reduction of the central sight.*

(b.) *R. p. with a good central sight, but with deviations in the other symptoms of the vision.* Unsymmetric limitation of the field of the vision, deficiency of hemeralopy (rarely); this was once only and solely represented by nyctalopia (Haase).

4. *R. p. with an anomalous fundus of the eye and anomalous trouble of the vision.*

(a.) Congenital Amblyopy or amaurosis dependent upon *R. p.*

These are distinguished from 3a by the incipient failure of the pigmentation of the retina which is developed during the first year of life, and by the congenital appearance of mostly complete blindness.

(b.) *Not congenital R. p. with prevailing central amblyopia, pigment in the retina being absent.* For that reason are these distinguished from 3a, by the more or less complete deficiency of pigmentation of the retina, distinguished from 4a by the disease not being congenital.

(c.) *Chorio-retinitis with anomalous symptoms, as far as congenital affection exists.*

5. *R. p. with a deviating course, unsymmetrical participation of both eyes, &c.*

* Leber anomale Formen der R. p. Arch. f. O.

To this classification by Prof. Leber I wish to add a series of questions which are, in my opinion, of importance in examining a case.

1. *Nos. of the case, or name.*
2. *Sex.*
3. *Age.*
4. *Patient's position in his or her family in order of birth.*
5. *Does the disease run among brothers and sisters ?*
6. *State of the eyes.*
 - (a.) *Vision.*
 - (b.) *Field of view.*—(Concentrical, unsymmetrical constriction ; defects ; centric or peripheric fixation.)
 - (c.) *Ophthalmoscopic examination.*
 - (d.) *Existing complications and concomitant symptoms* (nystagmus ; hemeralopy ; nictalopy, etc.)
7. *Etiology.*
 - (a.) *Direct transfer of the disease by the parents.*
 - (b.) *Consanguinity of the parents.*—(which degree ?)
 - (c.) *Syphilis. Inherited S. Acquired S.*
 - (d.) *Particular remarks as to the etiology.*
8. *General remarks.*

I would feel greatly obliged if any medical officer, who has it in his power to aid me in elucidating these matters, would kindly publish his observation or communicate with me direct as it would be a great matter were it possible to place the etiology of R. p. on a more satisfactory basis and to decide whether the suggestion of Dr. Macnamara regarding the connexion of the disease with inherited syphilis is true for natives. Further, it would be interesting to learn whether the cases arriving from hereditary or acquired syphilis in India appear under the typical features or, whether they show deviations similar to the above mentioned, and what influence therapeutics would have upon them.

Yours &c.,
G. Haase, M. D.

Dec. to Feb.

Our Exchanges.

1876 to '77.

We have to tender our best thanks to the Editors of the following Periodicals for regularly exchanging with us :—

The Indian Medical Gazette.
The British Journal of Homœopathy (H. Turner & Co., London).
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The American Journal of Homœopathic Materia Medica.

The United States Medical and Surgical Journal.
The American Homœopathic Observer.
The Western Homœopathic Observer.
The American Homœopathist.
The New England Medical Gazette.
El Criterio Medico (Madrid).
La Reforma Medica (Madrid).
La Homœopatía (Bogotá).

(We have not received these Journals for some years past.)

The Indo-European Correspondence.
The Hindoo Patriot.
The Bengales.
The Indian Mirror.
The Bengal Times (formerly *The Dacca News*).
Native Opinion (Bombay).
The Englishman : Saturday Evening Journal.
The Indian Daily News.
Mookerjee's Magazine. (New Series.)
The Bengal Magazine.
Sir William Jones's Works. (Publishing in Series.)
The "East"
The Indian Spectator.
The Indian Tribune.
The Statesman.
The Friend of India.

The Tattabodhini Patrikā (Bengali).
The Soma Prakāsa (Bengali).
The Bāmabodhini Patrikā (Bengali).
The Anrita Bazar Patrikā (Bengali and English).
The Samij Darpan (Bengali).
The Sahachara (Bengali).
The Saptāhika Samichūra (Bengali).
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THE ETIOLOGY OR CAUSATION OF MALARIOUS
FEVERS, WITH ESPECIAL REFERENCE
TO THE FEVERS OF BENGAL.

Since the issue of our triple number some important inquiries have been made relative to the cause of the fevers raging around Calcutta. These inquiries were instituted at the instance of Government, and we lay them before our readers. When we come to our own say it will be evident how far these inquiries have been successful in discovering the true cause so long sought for, so long discovered for us by a layman, and so long ignored. *

ENQUIRY INTO THE THEORY OF EPIDEMIC FEVER BEING CAUSED
SOLELY BY OBSTRUCTIONS TO NATURAL DRAINAGE.

FINANCIAL DEPARTMENT.—SANITATION.

Calcutta, the 31st July 1877.

READ again the following papers:—

Mémoire by Rajah Digumber Mitter, C. S. I., dated the 16th December 1876, adducing instances in support of his theory that the sole

cause of the epidemic fever, which of late years has prevailed in the districts round Calcutta, lies in the obstructions caused to the natural drainage of the country by the construction of railways, roads, and embankments.

Minute recorded by Sir Richard Temple, dated the 5th January 1877, on the subject.

Sanitation Collection I, January 1877, Nos. 3 to 7.

Sanitation Collection I, February 1877, Nos. 10 to 14.

Sanitation Collection I, March 1877, Nos. 23 to 27, relative to the appointment of a special committee, consisting of the following gentlemen, to inquire into the obstructions to the drainage in the districts around Calcutta, and to make a careful inspection of the general features of the fever-stricken tract, after consulting all the reports that had been written on the subject of the fever, viz.—

The Sanitary Commissioner for Bengal *President.*

Mr. J. Whitfield, C. E., Executive Engineer,	} <i>Members.</i>
Baboo Amrita Lal Mozoomdar, Assistant Surgeon,	
Baboo Pearl Mohun Mookerjee,	

The District Magistrates, Executive Engineers, and Civil Surgeons of Howrah, Hooghly, Burdwan, Nuddea, Jessore, and 24-Pergunnahs,— *ex officio* members, as far as their own districts are concerned.

Deputy Collector Baboo Hem Chunder Kerr, Member and Secretary.

Letter from the Sanitary Commissioner for Bengal, No. 594MI, dated the 15th May 1877.

Letter to the Sanitary Commissioner for Bengal, No. 1628, dated the 29th May 1877.

The Report of the Committee of Inquiry, dated the 4th July 1877.

At the outset of the proceedings the Sanitary Commissioner reported that in the absence of precise definition of the limits of the investigation, the work before the Committee was one of very great magnitude, while at the same time it appeared that Rajah Digumber Mitter and his friends were opposed to any lengthened investigation, believing that the truth of their theory was already fully established, and that it only remained for Government to take action to secure the proper drainage of villages. Dr. Lethbridge, while unable to accept the view that dampness of subsoil could be the sole and only cause of the fever, or that this dampness, which is general in Lower Bengal, had been brought about by roads and railways, yet thought that while inquiring into the causes of the dampness in the tracts subject to the epidemic fever, which was an admitted factor in the production of the disease, the Committee might set itself to devise a general scheme for providing sufficient drainage for this tract, and he suggested that the engineering element on the

Committee should be strengthened for the purposes of an inquiry of this nature.

2. In reply to this proposal the Lieutenant-Governor observed that while Rajah Digumber Mitter's theory was possibly right in some respects, artificial obstructions having in many cases occasioned, and in others aggravated, the outbreak of fever, it had nevertheless been repeatedly demonstrated that the fever had prevailed in villages and in parts of the country on which roads and railways had had no possible influence. At the same time, much had already been done in the way of devising drainage schemes in both Hooghly and Burdwan. Less than two years ago a commission had been appointed for this very purpose, but general drainage works had nevertheless not been undertaken, simply because all such schemes were practically impossible. Specially schemes under special laws had been carried out, and might still be taken up if the funds were forthcoming and good reason shown in each particular case. It was impossible for Government to undertake drainage works except at the invitation and with the co-operation of the landholders and others concerned. Admitting, however, that the question of drainage was of the highest importance, and that the present Committee might throw some further light on it by minute local inquiry, the Lieutenant-Governor requested them to examine, in the first instance, the specific localities of Shibpore, Bally, and Connagore, referred to in the Rajah's memorandum, in order that it might be seen from their investigations there whether there were grounds for continuing the investigation.

3. The report of the Committee has now been received, and it leaves matters exactly in the position described in the above letter. As regards the particular instances of artificially obstructed drainage referred to by Rajah Digumber Mitter in support of his special views, the facts ascertained by the Committee do not bear out his theory. But neither, on the other hand, do they disprove the position that the saturation of the subsoil in the Deltaic districts of Bengal is one chief cause of fever. or that this saturation may have been aggravated of late years by both natural and artificial changes.

4. Even were the measures which Government ought to adopt clear and indisputable, the present financial condition of the province prevents it from undertaking anything like a general

system of district drainage at the cost of the public revenues. But if in any particular case it is found that improvement can be effected by means of manageable local schemes, and that those benefited are willing and able to pay for the necessary works, Government will be very ready to assist such enterprise by every means in its power. The Embankment Act [VI (B. C.) of 1873] leaves ample power of initiation to the local authorities, and even minor obstructions, such as those described by Sir William Herschel in his note appended to the report of the Committee, may and ought to be removed under the provisions of that Act.

5. For the rest, all that Government can do is to warn its Public Works Department to see that in all projects for roads careful attention is paid to this question of drainage, and if in any place it is found that existing roads and works injuriously affect the outfall, such measures as are practicable must be taken to remedy the defect.

6. The thanks of Government are due to the members of the Committee, official and non-official, for the trouble they have taken in carrying out this work assigned to them. It is not, however, necessary that they should continue their sittings.

ORDERED—That this resolution, together with the papers read above, (with the exception of Sanitation Collection I, for January, February, and March,) be published in the *Calcutta Gazette*.

ORDERED also that a copy of this resolution be forwarded to the Secretary to this Government in the Public Works Department for information, with special reference to the fifth paragraph, and to Rajah Digumber Mitter, c. s. i., and the Sanitary Commissioner for Bengal for information.

Also to the Board of Revenue and the Commissioner of the Burdwan Division for information.

Memorandum by RAJAH DIGUMBER MITTER, c. s. i., showing the manner in which impediments have been offered to the drainage of some of the villages out of many.—Calcutta, the 16th December 1876.

Seebpore.—Situate opposite Fort William. The impediment to the drainage of this village has been offered by the filling up of a big drain which was called the Chowdhry's Gurh. This

was done by the Howrah Municipality between April and June of 1873, and the fever broke out in September following.

Bally.—The drainage of the village is interfered with by the construction of a metalled road about four years ago from the railway station running southward, crossing the drainage channel of the village. This road was Kutcha before, and the monsoon water made its way to its outfall—the Bally Khal—by making several breaches in the road, which having been filled up without substituting culverts for them, and the pukka road being higher and stronger, the drainage cannot make its way over and through it into the khal, as it did when the road was kutcha.

Besides this, the surplus low lands on either side of the railway line having been recently sold by Government, their present owners have converted them into tanks and gardens, offering additional obstruction to the passage of the drainage through them into the khal.

The drainage is also obstructed by a number of kutcha roads which have been constructed recently.

Connagore.—Situate within the Municipality of Scrampore. The drainage of this place ultimately discharged itself into its natural outfall, the Bally Khal. Obstructions have been offered to the drainage in the interior of the village by roads without culverts crossing the drainage channel, by the gradual silting up of the drains, and their encroachment by the owners of the adjoining gardens. Lastly, the surplus railway lands through which the drainage ultimately made its way into its natural outfall, the Bally Khal, having been sold by Government about three years ago, their present owners have converted them into tanks and gardens, thus cutting off the village completely from its outfall. When in June last I had the honor of sending a similar memorandum to His Honor, I observed in respect of this village: "It is apprehended that the epidemic will break out with greater virulence after the next rainy season than it has done before." I am sorry to say that my prediction has been fully verified. Those that can afford are removing from the village.

The Eastern Bengal Railway has intercepted the drainage of

<p>A line of villages extending from Itchapore, adjoining the Nawabgunge Powder Manufactory, to Chogdah.</p>	<p>these villages from finding its way into bheels Burroti and Muthoora. These places, which were noted for their healthiness, after passing through the</p>
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active stage of the epidemic fever which broke out within a year or two of the construction of the railway embankment alongside of them, have, like Choonakhally, Bhatpara, Cossimbazar, Kalkapore, Bamunghatta, and Sydabad, lapsed into a chronic state of unhealthiness.

Minute by the Lieutenant-Governor of Bengal, dated the 5th January 1877. •

A VERY general impression prevails among many native gentlemen of position and intelligence in Bengal that the disastrous fever which frequently breaks out in the districts round Calcutta is attributable to the obstructed drainage of the country. This is the view which has been publicly maintained with great ability and earnestness by Baboo (now Rajah) Digumber Mitter, c. s. i. According to these gentlemen the construction of railways and roads has blocked up many channels and outlets through which the drainage of the country formerly flowed. I have had the advantage of personally discussing the subject with Rajah Digumber Mitter, and he has at my request furnished me with a memorandum giving, in support of his theory, a number of instances in which, as he contends, the fever is plainly and directly attributable to obstructed drainage. A copy of this memorandum is annexed to this minute. There is undoubtedly a great deal of *prima facie* evidence in support of the Rajah's theory; and the subject is one of such importance to the welfare of the people that I think a special Committee should be appointed to examine the localities mentioned in the Rajah's memorandum, and any other localities which the Rajah or his friends may be able to indicate. I do not of course wish the Committee to confine their attention to these localities alone; they should examine other fever-stricken villages as well, in order that any conclusion at which they may arrive may be arrived at, not from a mere casual examination of a few selected villages, but from a careful inspection of the general features of the fever-stricken tract. The Committee should also consult the various reports which have from time to time been written upon this fever, and which contain much valuable information.

The Committee will be constituted as follows:—

• The Sanitary Commissioner for Bengal.

An irrigation officer of the rank of an Executive Engineer, to be selected by Colonel Haig.

A Native Assistant Surgeon, to be nominated by the Surgeon-General.

Baboo Hem Chunder Kerr, Deputy Collector, or some other Deputy Collector to be named by the Secretary in the event of Hem Chunder Kerr not immediately returning from his special deputation in Rajshahye.

Baboo Shib Chunder Deb, an ex-Deputy Collector, now residing at Howrah.

If the latter gentleman is unable to act upon the Committee, Baboo Peary Churn Mookerjee of Ooturpara may be asked to serve in his place.

A copy of this minute will be sent to Colonel Haig, Secretary, Irrigation Department, to Dr. Beatson, Surgeon-General, and to Rajah Digumber Mitter, c. s. l.

RICHARD TEMPLE.

No. 594MI, dated Calcutta, the 15th May 1877.

From.—A. S. LETBRIDGE, Esq., M. D. Offg. Sanitary Commissioner for Bengal.

To—The Secretary to the Government of Bengal, Financial Department.

I HAVE the honor to inform you that I received charge of this office from Dr. Coates on the 7th instant.

On my arrival I found one important subject in connection with this appointment that required my immediate attention.

At Delhi, and just previous to his departure from the province, Sir Richard Temple issued orders appointing a committee to inquire into the obstructions to drainage in the districts around Calcutta, with the view chiefly of testing by local inquiry Rajah Digumber Mitter's theory regarding the causes of the severe fever which has for some years prevailed in Bengal.

A subsequent order, dated 27th February, indicates that the districts to be included in the inquiry are Howrah, Hooghly, Burdwan, Nuddea, Jessore, and the 24-Pergunnahs.

Since my arrival I have devoted most of my time to reading carefully all previous reports and correspondence on the subject, and have had the advantage of a personal interview with Rajah Digumber Mitter.

The work suggested by Sir Richard Temple's minute is of such magnitude that I regret not having had an opportunity of verbally

bringing the subject in all its bearings before His Honor the Lieutenant-Governor.

At a preliminary meeting of the Committee held this morning it was resolved to submit, for the information of Government, a sketch showing the direction the inquiry ought to take, and the means to be employed for obtaining the required information. While this is under deliberation, I trust it will not be considered uncalled for if I record here the results of my unprejudiced study of the question.

The Government may be surprised to learn that Rajah Digumber Mitter and those with him who have helped for some years to keep this question before the public are opposed to any elaborate and lengthened investigation, believing, as they do, that their view has already been proved to be the right one, and therefore, according to them, it only remains for the Government to take practical action in the matter. What is meant by this is clearly stated in Rajah Digumber Mitter's pamphlet, page 5, of which the following is an extract :—

“I have already alluded to the provision in the Embankment Act of 1873 for the preservation of drainage channels, and the circular of the Board of Revenue on the subject ; but they are, I humbly submit, not sufficient. There ought to be a regular organized agency for the execution of this work, so essential to the health of the people. What is required is not large expenditure of money, but a careful, constant, and minute attention to the drainage of the villages ; and this attention cannot be secured unless there be an agency whose duty it shall be to report every obstruction to drainage, and to remove it wherever and whenever it may occur. This work, I think, ought to be performed by the Municipal, the Road Cess, and the Embankment establishments, acting under the orders of some central authority, be it the Sanitary Commissioner or the Superintending Engineer. The work after all belongs to the domain of what is called sanitary engineering, and if the Government, through the Public Works Department should make it a rule that the proper drainage of villages shall be maintained by the agencies I suggest, and should now and then make small contributions in aid of local funds for the execution of necessary improvements for efficient drainage, the object aimed at will, I am confident, be attained.”

It was shown by the Epidemic Commission of 1864 that the fever then prevailing was of malarious origin, and that the chief factor in its development was unusual dampness of the subsoil. With one or two exceptions, all subsequent inquirers (and they

have been many) are of the same opinion, and for all practical purposes it may be accepted that these two points are now established. It is when we come to account for the unusual dampness that we find a very considerable difference of opinion.

While I refrain from discussing the question here, I ought to mention that I cannot altogether accept Rajah Digumber Mitter's view of the dampness of the village subsoil itself being the sole and only cause of the fever, or that this has altogether been brought about by roads and railways; yet I am so profoundly impressed with the evidence that goes to show that long-continued dampness, at a time of the year when the soil ought to be rapidly drained of its excess of moisture, is the chief cause of unhealthiness, that I accept the Rajah's recommendations for facilitating the drainage of villages as being worthy of serious consideration.

Apart from the epidemic or severe types of malarious fevers, tropical diseases of all kinds are so directly influenced by a damp subsoil that the question of drainage in a country occupying the delta of a tropical river must be a matter of vital importance to its inhabitants, and therefore a subject of the deepest concern to its Government.

It cannot be denied that up to the present there has been no organized agency for facilitating drainage, or for restraining those who, from ignorance or self-interest, deliberately obstruct it.

If the Committee, while inquiring into the causes of the excessive dampness, could at the same time suggest reasonable means for removing it by utilising the natural drainage of the country, they would, even if they failed to elucidate the cause, confer a tangible and lasting benefit on the inhabitants of the province.

I venture to think that the Bengal Government has the power in its existing laws to organize a regular scheme for providing sufficient drainage without materially interfering with the cultivation of paddy, and I would gladly see the services of the Committee utilised for this purpose.

If the suggestion here offered was adopted, it would be necessary to increase the engineering element in the Committee by deputing a special officer for the work. At present that Committee has only the part services of an officer who has many other important duties to perform.

The extra work thrown on this office would also be very considerable; but, regarding it as a most important sanitary undertaking, I would gladly take my part in it.

No. 1628, dated Calcutta, the 29th May 1877.

From—H. J. S. COTTON Esq., Junior Secretary to the Government of Bengal,

To—The Sanitary Commissioner, Bengal.

I AM directed to acknowledge the receipt of your letter No. 594, dated 15th May 1877, in which you discuss the functions of the Committee appointed to inquire into the obstructions to drainage around Calcutta. Your letter No. 3, dated 17th May 1877, with which you forward a copy of the preliminary proceedings of the Committee, has also been received and been laid before the Lieutenant-Governor.

2. Mr. Eden understands Sir Richard Temple's desire to have been that the Committee should inquire into and report how far Rajah Digumber Mitter's theory that the epidemic fever is exclusively attributable to artificial obstructions to the drainage of the country is true or not. The Rajah maintains that by the construction of roads and embankments the natural drainage of the country has been obstructed, and that this is the sole and only cause of the fever. But it has been demonstrated again and again that the fever has prevailed in villages and in parts of the country with which roads and railways can have had no possible concern. On the other hand, it has equally been shown that the Rajah is right to a very great extent, and that artificial obstructions have in many cases occasioned, and have in others aggravated, the outbreak of fever. The functions of the Committee, according to their original scope, would then seem to be to show categorically that in certain specified villages the theory of Rajah Digumber Mitter is sound and true, while in others it has no application. The Lieutenant-Governor, however, understands from your letter that this is not the object to which the Rajah himself would wish to see the energies of the Committee to be devoted. Assuming artificial obstructions to be the cause of the fever, it is desired by the promoters of the commission that Government should take practical action in the matter by remov-

ing obstacles and affording every facility for drainage in the affected tracts.

3. There is little doubt that the epidemic fever is of malarious origin, and that, while the chief factor in its development is unusual dampness in the subsoil, this dampness is created by defective drainage. The Lieutenant-Governor observes that, accepting this view, you confine yourself in your letter to recommending action in the direction of increased and improved drainage. If the Committee, you write, while inquiring into the cause of the excessive dampness, could at the same time suggest reasonable means for removing it by utilising the natural drainage of the country, they would, even if they failed to elucidate the cause, confer great benefits on the people; and you go on to say that you would gladly see the services of the Committee utilised in the organization of a general drainage scheme.

4. The Lieutenant-Governor, however, is obliged to point out that this proposal is not new, and that much has already been done in the way of devising drainage schemes in the districts of Hooghly and Burdwan. It is less than two years ago since the last commission, consisting of a sanitary officer and an engineer, was appointed for this purpose. General drainage works have nevertheless never been undertaken. It is only special schemes, such as the Dancoonee drainage project, that have been carried out, and these have been done under special laws passed to facilitate their operation. It is not possible for Government to undertake drainage works, except at the invitation and with the co-operation and at the expense of the landholders and tenant-holders concerned.

5. The question of drainage is, however, of the very highest importance, and it is possible that the present Committee may be able to throw some additional light on the subject. As the sittings of the committee have commenced, the Lieutenant-Governor thinks that, under your guidance, they should proceed with as little delay as possible to examine Shibpore, Bally, and Connagore, the places mentioned in Rajah Digumber's memorandum, and see if they can find from their investigations there whether there are any grounds for continuing the inquiry. The advantage of making a local investigation in these places is manifest, and after actual inquiry the Committee will be more

qualified than it is at present to decide whether its labours can profitably be directed to any practical use. You are requested to submit a full report on the subject after visiting these localities.

Dated the 4th July 1877.

From—The Committee appointed to inquire into the Obstructions to Drainage in the Districts around Calcutta.

To—The Junior Secretary to the Government of Bengal.

THE Committee appointed to inquire into the obstructions to drainage in the districts around Calcutta beg to report, for the information of His Honor the Lieutenant-Governor, that they have carried out the instructions contained in your letter No. 1628, dated 29th ultimo, and brought their labours to a close.

2. Rajah Degumber Mitter's memorandum, dated the 16th December 1876, which accompanied Sir Richard Temple's minute of the 5th January, was adopted as the basis of this inquiry, and special care was taken to see that the Rajah had every opportunity given him for substantiating his statements and proving the correctness of the theory which he has advocated for many years. After a careful local investigation into every statement made regarding Shibpore, Bally, and Connagore, the Committee have arrived at the following conclusions. At the same time it is necessary that we should state that we are not prepared to say that increased dampness is not one of the causes of the fever. This is also perhaps the proper place to mention that there is a popular idea that there is increased dampness in the villages around Calcutta.

3. SHIBPORE.—As regards Shibpore, the inquiry was directed towards the following points:—(1) the history of Chowdhry's Gurb, (2) its filling up and the effect produced on the drainage, (3) the history of the severe malarious fever which occurred in 1872 and 1873.

4. The inquiry would be incomplete if we did not at the outset notice the following statements, which first appeared in the columns of the *Hindoo Patriot* (December 29th 1873) and subsequently in Rajah Degumber Mitter's Pamphlet, at page 85:—"While upon this subject, we may as well notice a striking illustration of the Hon'ble Degumber Mitter's theory, which has

presented itself almost under the very nose of our authorities. At the latter end of September last the same epidemic fever which has for the last 14 years been desolating some of the fairest and healthiest parts of Bengal broke out most furiously in a village called Shibpore, which is situated over the water and nearly opposite the Fort, and enjoying the privileges and blessings of municipal government. For some days the number of deaths was more than thirty per day, and some idea might be formed of the virulence of the fever and the havoc already committed by it when we mention, on reliable authority, that in a particular locality of the village called Chowdhryparah nearly 25 per cent. of the population have been already carried away. The only sign yet exhibited by the local authorities of their knowledge of this terrible outbreak is the stereotyped order to clear the village of all vegetation, which—true to the saying মড়ার উপর খাঁড়ার ঘা, or ‘slaying the thrice slain’—is being vigorously carried out. Now the real cause of the outbreak of the fever in Shibpore, as everywhere else, is so plain and palpable that it must obtrude itself upon every man’s notice who would enter the village, unless his eyes and ears happened to be absolutely closed; for as soon as you enter the village and express your wish to know if any physical change had taken place in it immediately before the outbreak of the fever, every child will tell you that a big drain—traversing the place both north and south as well as east and west, and which goes by the name of Chowdhry’s Gurh (গুড়)—has been filled up by, or under the orders of, the Municipality between April and June last. This big drain cannot also possibly fail to strike any man as being the drainage channel of the village, carrying the periodical moonsoon rainfall over the village through a culvert in the road to its outfall, the Hooghly, by means of a creek which runs along the southern boundary of the Botanical Gardens. This drain, as already observed, was filled up between April and June last, and the epidemic fever—true to the law which governs it, as we have repeatedly shown in these columns—broke out at the latter end of September following. We are aware that it is hard for our rulers, learned in the abstruse laws of nature, to swallow such a simple cause as this explaining so important a phenomenon, which has for the last 14 years eluded the grasp of their own scientific officers. But whether our

lamentations are heard or not, the very expression of them gives relief to our minds, and this is one excuse for recurring so often to the subject."

5. The Chowdhry's Gurbh was originally a large excavation surrounding a house in the Chowdhryparah quarter of Shibpore. Considerable portions of this Gurbh were filled up by the proprietors at periods varying from 50 years to 15 years ago, leaving a large excavation 600 feet long, $28\frac{1}{2}$ feet wide, and $13\frac{1}{2}$ feet deep. This was the so-called drain referred to in the memorandum. This limited portion of the original Gurbh was let as a fishery, on the understanding that the ryot who held the lease also kept it clean. The latter clause was added because the Municipality had directed the Chowdhry's attention to its filthy state. Local evidence went to show, however, that even after this arrangement it continued to be a nuisance to the neighbourhood, emitting noxious effluvia when the water in it was low.

6. About the beginning of 1873 the Municipality noticed the dangerous proximity of the Gurbh to the public road, and, with the view of preventing accidents to carriages and foot-passengers, called upon the proprietors to have it properly fenced in. The slight bamboo fence erected by the Chowdhries did not meet with the approval of the municipal authorities, and it was therefore decided that a substantial paling should be put up and the cost charged to the owners of the Gurbh. Rather than pay what they considered an unreasonable charge, the Chowdhries offered to fill up the Gurbh; and on this understanding the process of filling up was begun, the street-sweepings of Howrah being first used for the purpose. But as this was objected to by the inhabitants in the neighbourhood, the Chowdhries completed the work with soil from the adjoining land.

7. Contrary to the statement made by a former Magistrate of Howrah in his remarks in the Sanitary Report for 1873, it would appear that the work was completed between April and June 1873. There is still a depression along the whole length of the excavation to mark the spot where it existed; and this depression, as will be seen by a reference to map A, serves to carry off the surface drainage by the old culvert under the public road.

8. To enable the Committee to arrive at an accurate conclusion regarding the part taken by Chowdhry's Gurbh in the drainage

of this quarter of Shilpore, it was considered advisable to obtain a careful survey of the neighbourhood. This was done by a competent overseer of the Public Works Department under the guidance of Mr. Whitfield, and the result is shewn in map A. At the request of the other members of the Committee, Mr. Whitfield has drawn up a memorandum discussing this question by the light of facts supplied by the levels and survey giving the features and configuration of the ground, and he has proved to the satisfaction of the Committee that it is physically impossible that the filling up of the Chowdhry's Gurh can have caused any obstruction to the drainage.

9. The Committee also made a general examination of the spot, and held a careful local inquiry among the inhabitants best qualified to speak on the subject. The first point ascertained was the fact that, before any drainage towards the natural outfall (the *bheel*) can take place, the tanks in the neighbourhood, which are very numerous, must first be filled; and the Committee were taken from one such tank to another, in the supposed order in which they were to be filled. The Chowdhry's Gurh, from its size and position, acted in the same manner as regards drainage as did the other tanks, with this exception, that, being the last of the series, it filled only when all the other tanks had overflowed into it, and then, when it was itself full, discharged its surplus water into a drain running under the main road and communicating with the *bheel*. One native gentleman stated—and those who were present agreed with him—that seven eighths of the drainage of the whole area comprising Baniaparah, Deyparah, Chowdhryparah, Dhobaparah, and Dhurumtollah, first passed into the neighbouring tanks and then by their overflow to the Gurh, and that only one-eighth found its way direct to the Gurh. The importance of this fact on the question at issue will be seen presently.

10. The meteorological records of Calcutta and Howrah show (and the local evidence is to the same effect) that the rainfall in 1872 was very deficient, viz. 46.6 inches, or 20 inches below the average of 30 years. In this year it was proved that the Gurh was dry, and that it could not therefore have acted as a drainage channel. The rainfall in 1873 was also insufficient, being 47.5 inches, or still nearly 20 inches below the average. The tanks

were in consequence not filled with water, and therefore the Chowdhry's Gurh, if it had remained open, could not have acted as a drainage channel for seven-eighths of the area it was supposed to drain. For the remaining eighth there was a sufficient water-way for such an unusually small rainfall through the old though narrowed, culvert under the road. The obvious conclusion, therefore, is that the filling in of Chowdhry's Gurh offered no obstruction to the drainage in 1873, and consequently could not, as it is alleged, have been the cause of the fever.

11. This latter conclusion is also arrived at by a series of inquiries into the history of the fever itself. It ought to be observed that the evidence taken on this point was most reliable, being derived chiefly from official records and also from intelligent medical practitioners at Shibpore, one at least of whom was able to consult private notes on the subject. The first official notice of the outbreak of fever in Shibpore is to be found in Dr. Elliot's Sanitary Report for 1872, an extract from which is given in the Appendix; and we would remark that on this subject the evidence of the Native practitioners is also very clear. Fever of a severe and fatal type first made its appearance in August and September 1872 in the following quarters of Shibpore:—Sanaparah, Cazeeparah, Bhorparah, and Betaitollah. Although these quarters of Shibpore are situated on the borders of Chowdhryparah to the south, their drainage is in no way connected with the Chowdhry's Gurh, but is carried by a separate channel direct into the river. So severe was the fever in these places, that almost all the inhabitants suffered from it; and it is remembered as a curious fact that, with only a few exceptions, the residents were from sickness unable to attend a religious ceremony held by Baboo Ram Chunder Mookerjya.

12. As is usual with this fever, the disease abated in intensity during the hot weather months of 1873. In August 1873, however, it re-appeared at Jogiparah, a quarter which lies to the north-west of Chowdhryparah, and which, moreover, is in no way connected with its drainage system. From this point the fever appears to have spread in two directions—easterly towards Mookerjyaparah and Haldarparah, and westerly to Mussulmanparah and Pochechimparah. Towards the end of the year it became general, including, among other places, Chowdhryparah

and the quarters adjoining the Gurh. The fever was of a very severe and fatal type, but it was said not to have been so fatal in Chowdhryparah as in other places. The Native gentlemen present, while not denying this statement, suggested that the lower death-rate was due to the better medical attendance which the well-to-do residents of this *parah* could command. Dr. Bird's remarks on the fever of 1873 will be found in the Appendix.

13. In 1874 fever of a modified and less severe type broke out at the same time and in the places as in the previous year. There was also less mortality, the deaths occurring chiefly among those who had suffered from fever in 1873.

14. The general health of Shilbore, though not restored to its normal state, is now much better than it was in 1873 and the following years.

15. The inquiry into the history of the fever, therefore, proves that it first began, in 1872, in the neighbourhood of Chowdhryparah; that in 1873 it again showed itself on the borders of Chowdhryparah, in an opposite direction to the place first attacked in the previous year; that both these places were entirely unconnected with the drainage system of Chowdhry's Gurh; that it was only after the disease had become general that Chowdhryparah was attacked; that the mortality, influenced by whatever cause, was less in Chowdhryparah than elsewhere; and lastly, that the general health is now improved though Chowdhry's Gurh remains filled up. Now, it has already been shown that in 1872 and 1873, the years of the fever, the rainfall was so deficient that Chowdhry's Gurh could not have acted as a drainage channel. The final conclusion, therefore, is that the fever was in no way influenced by its being filled up.

16. BALLY.—The inquiry at Bally was limited to an investigation of the statements made in the Memorandum regarding the obstructions offered to its proper drainage. The points particularly examined were (1) the direction of the drainage and its outfall; (2) the position of the metalled road which runs southward from the Railway, and its relation to the drainage system; (3) the tanks and gardens which are said to have been made in the surplus Railway land; (4) the construction of recent kutchas roads and the obstructions caused by them.

17. Before proceeding to consider the points referred to in detail, it is necessary to state here that Raboo Ram Chunder

Mitter, who represented Rajah Degumber Mitter, and who was present during the whole of the local inquiry, submitted a sketch and memorandum for the information of the Committee. This sketch and memorandum are herewith attached for the purpose of showing how Rajah Degumber Mitter has been misled by his informants.

18; The accompanying map, showing the drainage of this portion of Bally, was the result of a recent survey of the town undertaken under the direction of Mr. Whitfield. In the memorandum attached to the map the whole question is carefully discussed. The Committee agree with the opinion expressed, viz. that there has been no obstruction, nor is it possible that there could be any.

19. At a local investigation the members of the Committee carefully followed the main drainage system, and during their progress made the necessary inquiries from the inhabitants residing in its proximity. The conclusion arrived at was, that not only does the drainage take the course shown by Mr. Whitfield's map, but that these drains have existed as long as the oldest inhabitants could remember. The drains, both large and small, were found clean and well kept, and culverts are provided wherever they are required. The last culvert in the series was, however, found broken, but the inhabitants on the spot stated that it did not cause any obstruction to the outfall. The Committee were also able to judge for themselves that this was the case, as the spring-tides had passed up the drains for a considerable distance, and had, within a short time, been thoroughly re-drained again into the Bally Khal. It is well to notice here that the drainage of the village up to the metalled road runs from east to west, and that the eastern ditch along that road then forms the principal drainage channel, and runs in a north-easterly direction till it discharges itself into the Bally Khal.

20. The Committee next followed the metalled road, referred to as running southward from the Railway-station. This road was formerly a kutchā road; it was metalled in 1873. On a reference to the map, it will be seen that the drainage being in the direction already indicated, this road cannot be said to cross the principal drainage channel of the village. There is only a narrow strip of land between the road and the Railway, with not more than two or three huts on it. For the rainfall of this area

sufficient culvert space is allowed and proper drainage provided. The highest part of the metalled road being, moreover, below the surrounding land, the Committee fail to see what combination of circumstances could ever make it an obstruction.

21. It is asserted that the Railway surplus land has been converted into tanks and gardens. Only one such tank and garden could be found. This belongs to Baboo Kedar Nath Chatterjya, and is situated near the Railway-station. A reference to the plan will show that the direction of the drainage being away from the line of Railway, the tank and garden can offer no obstacle to it whatever; and this fact was corroborated by disinterested inhabitants, who stated that in very heavy rain some water used to find its way towards where the new tank is now, but that usually the drainage was in the opposite direction.

22. With regard to the statement that obstruction is caused by a number of recently-constructed kutchas, the Committee find that no new roads have been constructed for the last 10 or 15 years, nor was any one such road pointed out to them. The old kutchas, it is true, have been repaired, and consequently raised; but as they appear to be provided with proper drains and culverts, they cannot offer any obstacle to the drainage.

23. Every statement made regarding Bally having been found to be incorrect, it was considered unnecessary to make any inquiry into the prevalence of fever.

24. CONNAGORE.—At Connagore the inquiry was, as in the two previous instances, directed to the points especially referred to in the Memorandum—(a) the direction of the drainage outfall; (b) the roads without culverts which, by crossing the drainage channels, interfere with the drainage; (c) the silting up of drains and the encroachment on them by owners of adjoining land; (d) the obstructions to drainage caused by the construction of tanks and gardens along the Railway embankment; (e) the history of malarious fever in the village, and its connection with the obstructions referred to.

25. The natural outfall of the drainage lies in two opposite directions. The northern and smaller portion, comprising Pearabagan and Hateerkool, drains direct northwards into the Bagerkhal. The tidal water of the *khal* passes into those parts of the village which comprise the greater portion of it, and which drain

southward along the Railway embankment over lowlying lands towards the Bally Khal. It is therefore worthy of notice that the outfall is not solely towards the Bally Khal, as has been stated. The importance of this point will be seen in the history of the fever further on.

26. Since the main roads of the village run parallel to the drainage channels, no serious obstructions can be caused, nor were any pointed out to the Committee; and we were told by a Municipal Commissioner, at present engaged in improving the drainage of Connagore, that, except in a few minor instances, no such obstruction existed.

27. As regards the silting up of drains, the Committee have no doubt that this occurred here as it does elsewhere. We have evidence, however, to show that measures were taken in 1875 to clean the drains, and that these measures are not being repeated. With reference to encroachments on the drains in the interior of the village, the two instances mentioned by the inhabitants occurred 10 to 20 years ago.

28. The Committee went very fully into the question of the obstructions offered to the drainage along the Railway surplus land, and they find that two gardens with tanks have existed for some years, and that one other has been constructed within the last eight months.

29. The Railway surplus lands were sold by Government in 1872, and in August 1873 Baboo Shib Chunder Deb, a resident Municipal Commissioner, represented that interference with the drainage had been commenced by the purchasers, who were then constructing the two tanks and gardens already referred to. With the representation was submitted a request that the Government would issue orders to prevent the owners from carrying on the work. It would appear that, since the land was sold unconditionally, the Government had no power over the purchasers, and no action could therefore be taken in the matter.

30. No further mention is made as to any interference with the drainage until 1875, when one of the garden proprietors constructed a bund across the side ditch near the Railway-station. It was, however, allowed by all the local witnesses that no actual obstruction took place, because an opening was made in the bund during the rains to allow the water to escape. But this was not

done until the people had remonstrated. In 1876, however, the owner referred to refused to make a similar opening in the bund, and the consequence was that some obstruction did take place, causing the submersion of a part of the Ryland road, which has since been raised. This obstruction was brought to the notice of the Magistrate, but it was not till after the rains had ceased that the official orders for its removal were carried out. There is at the present time a sufficient opening in the bund to allow water to escape towards the Bally Khal.

31. The history of malarious fever in this village was chiefly obtained from the full annual reports submitted by Dr. Greene, the Civil Medical Officer of Serampore. It is therefore advisable in the first place to consider briefly Dr. Greene's views on the subject as they are stated by himself in his reports. He has, since 1871, looked upon defective drainage as the main cause of the fever; but he has also, in some years, referred to the poor condition of the people, the practice of steeping jute, &c., as causes which in a measure influenced the fever outbreaks. In 1874, when the fever was rapidly dying out, he attributed it to the better drainage provided by the Dancoonee Canal and the opening of the Surusuttee Khal. The fever having increased in 1875 and 1876, he changed his opinion as regards the beneficial influence of the canal, and now regards it as one of the drainage obstructions to the country on account of its high banks. The importance of Dr. Greene's evidence lies, however, in the fact that although he has for a number of years held strong views on the subject, and has seen much fever in his district, he is unable to point to any one single instance in which obstruction to drainage was the sole cause of the fever; and he was obliged to admit that, as far as Connagore was concerned, the northern portion, which drains directly into the Bagerkhal and the villages that lie west of the Railway, and consequently drains without any obstruction inland, suffered just as much as the obstructed area draining southwards to the Bally khal. Two statements made by Dr. Greene regarding obstructions caused by the Railway and canal have been objected to by individual members of the Committee. As regards the Railway, it is stated by one member that a careful inquiry has shown that it does not obstruct the drainage of the land lying between it and the river Hooghly. The other

statement, which refers to the canal, can hardly be entertained when it is known that at every 500 feet an opening exists in the embankment to allow the surface drainage to pass into the canal.

32. Fever in an epidemic form was noticed in certain parts of the district around Serampore in 1871, the places specially mentioned being Buddiabatty, Singoor, and Kristonuggur. In the Sanitary Report for 1872 it is stated that fever of an epidemic type commenced in July in Connagore, Rishra, and Buddiabatty, and during the following months extended to Mohesh and Bullubpore. It was most severe along the banks of the Ganges, and is said to have affected 50 per cent. of the population.

33. In 1873 there was no fresh outbreak of fever, but traces of the previous year's fever were to be found in some places, and especially Kristonuggur. The report for 1874 records the dying out of the fever, and the improvement is chiefly attributed to the construction of the Dancepore Canal and the bringing of the Damoodur water into the Surusuttee.

34. In 1875 fever of a malarious type was reported to have appeared in an epidemic form at Connagore, Bashye, Kanyepore, and Rishra. It commenced in September and continued to the end of the year, and the sickness being very considerable, it was found necessary to provide a charitable dispensary at Connagore for the treatment of the poorer classes. Among the causes mentioned by Dr. Greene are included the obstructions caused by the making of tanks and gardens along the Railway embankment, and it is asserted that water lay in stagnant pools along the line of Railway. It has already been shown that the bund which had been constructed by one of the proprietors had an opening in it for the passage of water towards the Bally Khal. We notice that the rainfall in this year was even less than in 1872.

35. In the Sanitary Report for 1876 it is stated that fever again prevailed at Connagore, while other parts of the district were healthy. The mortality was, however, only nominal. It may, however, be allowed from the evidence gathered that there was considerable sickness towards the end of 1876; but as the mortality was nominal, the disease must have been ordinary malarious fever of the country. It was during the rains of this year that the bund alluded to offered an obstruction to some portion of the drainage of Connagore.

36. It should be added, that the Member of our Committee best qualified to speak on this subject is of opinion that, although there may have been some obstruction caused by the bund, it is physically impossible, from the nature of the ground, that it could have been to any great extent.

37. At the request of the Magistrate of Hooghly we submit the following memorandum recorded by him :—

“ It should be noticed, once for all, that complaints founded on the filling up of Railway side-cuttings are misleading on all sides. These cuttings are never intended to act as drains, and purchasers have an absolute right to fill them up as they like. It is not the filling of them up that causes any difficulties, but the fact that purchasers raise their ground *above the level of the fields*, which sometimes is going beyond their rights, thus causing obstruction in the surface flow of water along the toe of the embankment to nearest waterway under it, or at its end. The error here noticed is incessantly causing confusion. The complaints are often well founded, but are at once answered by exposing the fallacy of the argument used in support of them. The abundance of the water-way under the Railway has been over and over again demonstrated, and is now no longer denied. But in order that these arches shall serve their purpose, it is generally essential that there should be no ramps or other obstructions running out from the embankments which do not leave free passage for water at the level of the natural surface all along the toe of the Railway embankment. In this instance we find no obstruction caused by the filling up of the cuttings; but we find that there was a bund made and land thrown up to some distance from the Railway which stood above level of the natural surface, and thus became an obstruction, till a cut was made which goes no deeper than the level of the rice-fields around.”

38. In conclusion, we would mention that the district officers of Howrah and Hooghly, and the sub-divisional officers of Serampore, were present at our local meetings and took an active part in the inquiry. Our acknowledgments are due to the Municipalities of Howrah and Serampore for the cordial manner in which they have assisted us in this inquiry. The Committee are also indebted to Baboo Shib Chunder Deb of Connagore for much valuable information and assistance.

We have the honor to be,

SIR,

Your most obedient servants,

A. S. LETHBRIDGE, M.D., *President.*

J. WHITFIELD,

W. HERSCHEL (*with a note*),

PEARI MOHUN MOOKERJEE,

AMRITA LAL MOZOOMDAR, | *Members.*

HEM CHUNDER KERR;

F. H. PELLEW, *Magistrate Howrah,*

J. G. PILCHER, *Surgeon Major,*

Civil Surgeon, Howrah,

W. H. GREGG, *Surgeon, Hooghly,*

I THINK it necessary to observe that the limitations which the Committee consider have been put upon the scope of their inquiry under the instructions of Government (*vide* letter No. 1628, dated the 29th May last) preclude them bringing Rajah Degumber Mitter's theory, that subsoil humidity occasioned by obstructed drainage is the cause of the epidemic fever, to a satisfactory test. The Committee have simply inquired into the instances mentioned in the Rajah's memorandum; but this memorandum does not give all the facts which could be collected on local inquiry. Be that as it might, I should mention that in course of our inquiry persons came forward to give evidence that want of drainage or imperfect drainage was connected with the outbreak of fever in portions of the three villages inspected by the Committee: but, as the President remarked in one of the meetings, the scope of the Committee's inquiry being restricted, they could not take cognizance of facts or cases not included in the Rajah's memorandum. Such being the case, I for one would wish it to be understood that this report of the Committee should not be accepted as a conclusive solution of the question.

PEARI MOHUN MOOKERJEE.

The 4th July 1877.

NOTE.

I ATTACH importance to the fact established by the evidence of Dr. Greene and of the Joint-Magistrate, that the obstruction caused by the tank (or bund) and garden at the Railway-station was serious. It headed the drainage back for three consecutive weeks into the heart of the village. We are bound, I think, to notice the excessive soaking thus caused, and the coincidence thereof with the outbreak of 1876, even although the negative character of the rest of the evidence prohibits our attributing the one to the other as effect to cause.

W. HERSCHEL.

The 6th July 1877.

APPENDIX.

Memorandum on the Drainage of SEEBPORE, by J. WHITFIELD, Esq., C. E., Executive Engineer, Northern Drainage and Embankment Division, dated the 30th June 1877.

THE area draining through Chowdryghur contains 707½ beeghas, or a little over one-third of a square mile, and is shown on the accompanying plan* by a shaded blue dotted line. The figures on the plan show the relative heights of the ground and channels, and the direction in which the water flows, is shown by arrows. On referring to the level figures it will be seen that the ground varies in height about 6 feet, the highest ground being on the south and east side and forms a water-shed line in that direction. On the west and north sides the ground is somewhat irregular, but all drainage towards Chowdryghur is cut off by spoil earth from tank excavations, houses, and the unevenness in the natural ground level; and from the boundary line shown on the plan, the drainage finds its outlet in the direction away from Chowdryghur.

2. The tanks are in the first instance receptacles for all the rain that falls, and, as shown on the plan, they generally overflow from one to another, and, when quite full, spill over the surface of the ground and by the nearest outlet (if there be any) flow into Chowdryghur; otherwise the overflow water takes the lowest ground and thus finds its way into Chowdryghur. At A the water from the southern portion of the ground, draining into Chowdryghur, falls first into the side ditch of the road, the bed of which is 37·38 at that point; it then runs north along the north side of the road, the level of the ditch being 37·25, 37·49; and at the commencement of what was Chowdryghur at B the bed of the ditch is 37·69. At the point B the water of the remainder of the southern part of the basin reaches the Chowdryghur, the level of the bed of the ditch at its discharge into the ghur being 37·69.

3. The water from the remaining portion of the drainage basin joins Chowdryghur from the north at D, at a level of 36·50.

* We tried to procure the plans referred to, but have not been successful.—
Ed., Cal. Journ. Med.

This point is the outlet of Chowdryghur, and the outlet of the whole basin. Alongside, and parallel with the road, and road-ditch, is a depression in the ground about a foot below the level of the ditch, and about the same level as the final outlet culvert at D.

4. Now tracing back the levels from this final outlet at D, where the bed of the ditch and the bed of the outlet culvert are the same, viz. 36·23, there is a continuous rise over the filled up site of Chowdryghur, except very trifling irregularities; but in no case are the depressions below the outlet ditch and culvert, as shown by the section A, C, B, D.

5. Between B and D, along the site of Chowdryghur, which was filled up between April and June 1873, there is a continuous, although not uniform, fall of 1·46 feet in a distance of 350 feet. It is therefore physically impossible that the filling up of the Chowdryghur can have caused any obstruction to the drainage.

6. The level heights fully confirm the conclusions of the Committee in that respect, on their inspecting the locality.

7. The overflowing of the tanks from one to another in the zigzag and circuitous manner shown on the plan must, when that takes place, inundate a very large proportion of the whole area; but it is clear that Chowdryghur is in no way answerable for this. The same thing is a common feature in most of the villages; and if some measures could be introduced to prevent this, there can be little doubt that it would greatly improve the sanitary condition as well as the comfort of the inhabitants.

*Memorandum on the Drainage of BALLY, by J. WHITFIELD, Esq.,
C. E., Executive Engineer, Northern Drainage and Embankment
Division, dated the 30th June 1877.*

THE accompanying plan shows the roads which are alleged to have obstructed the drainage, and which the Committee inspected and was satisfied that they did not cause any obstruction, and that the drainage, instead of flowing inland towards the wheels in the direction of the general natural fall of the surface of the ground, is intercepted by deep ditches alongside the roads, and by them conveyed into Bally Khal at A.

2. On either side of the road B C there is a ditch 2-3 below the level of the road and 5 to 6 feet below the level of the ground. At C is a culvert under the road giving a passage for the water from the south side into the drain or khal leading into the Bally Khal at A.

3. There is a continuous, though not quite uniform, fall in this drain, as shown by the red figures from B to A. The distance is about 1,600 feet, and the fall from B to A is 5 feet, so there cannot be any doubt about the sufficiency of incline to insure a rapid outflow.

4. The road extending from the Railway-station southwards, parallel to the Railway line between the Railway and the village, which was alleged to have seriously interfered with the drainage, is shown on the plan at B D. This road is metalled about half this distance and, like the other road, is provided with deep ditches on either side, with culverts under the road connecting the ditches; culverts also connect the ditches on either side of the unmetalled portion. The beds of the side ditches are about 3 feet below the surface of the road and 4 to 6 feet below the level of the ground on either side, so that if there were no ditches the road itself would form a drainage channel instead of an obstruction, being, as is shown by the level heights, from $1\frac{1}{2}$ to 3 feet below the level of the ground on either side.

5. The same may be said of the road C E F, except that the metalled part of the road is on the same level as the ground instead of being below. It does not, however, offer any obstruction, and the water which overflows it, if any, is carried off by the side ditch. From E to F the road is unmetalled, and its surface is below the level of the ground on each side. At E the water is carried through the drain and flows into the B D road-ditch at G. At H the drainage separates and flows east and west, as shown on the plan. At K and L the roads pass under the Railway, and to obtain greater headway at K the surface of the ground has been lowered; but as it is only about 6 inches below the level of the ditch at the side of the road leading to it, there cannot be any important accumulation, and being a slight depression of 6 inches it does not in any way offer obstruction to drainage.

6. The tank at the station is isolated, and does not stand in

the way of any drainage. When full, if ever that happens, the overflow will fall into the drain adjoining.

7. The spring-tides in the rains sometimes rise as high as 17 feet, and when that occurs all the ditches are filled, and the roads and ground below that level covered with water, but it all readily flows out again. The Committee noticed the mark of the spring-tide which had flowed in a few days before the inspection, but no water was left behind.

8. From the levels shown on the accompanying plan and the personal observation of the Committee, the conclusions of which the levels confirm, there are no grounds to show that the roads referred to have been obstructions to drainage, but, on the contrary, they establish the fact that, as far as the roads are concerned, there has not been any obstruction.

Extract from the Sanitary Report of Howrah for 1872.

"Endemic, intermittent, and remittent fever of a congestive type was unusually prevalent in certain portions of the district at the drying up of the rains and during the early part of the cold season. The villages in which I have personally seen the disease are Sheebpore, Shanaparah, Moolaparah, Kamarparah, Khoorool, and others contiguous to the station and town of Howrah."

Extract from the Sanitary Report of Howrah for 1873.

"Fever has prevailed in the district throughout the year, but with greatest intensity during the second half of it. It was present with special force and fatality during October, November, and December, in the Sheebpore and Belgatchia villages, within the limits of the municipality."

The village *Bally* is situated on the west bank of the River Hooghly and about five miles from Calcutta. The natural drainage of the village, following its slope, used to flow from east to west, that is, in a direction away from the river-bank, and ultimately came back to it through the "*Bally Khal*," which extends

along its north-west side. The East Indian Railway line, which passes along the west of the village, that is, across the direction of its slope, did not materially interfere with its drainage, as part of the monsoon water used to flow into the khal along the east side of the line, and the rest, which used to fall into the khal along its west side, easily found its way there by means of culverts existing in the line. But a road which extends from the Railway station southwards, parallel to the railway line between it and the village, has very seriously interfered with its drainage. This road was kutchha, or unmetalled, before, and the rush of the monsoon water in seeking its natural outlet had made several breaches in it, through which it used to make its way to its natural outfall. But about three years ago the road was metalled and the breaches filled up without substituting culverts for them. Besides this, the surplus lowlands on either side of the line have now been sold, and their present owners have converted them into tanks and gardens—thus obstructing the passage of the village drainage through them into the khal.

Besides the above road, there are a number of kutchha roads (all constructed recently) in the interior of the village, which have more or less offered obstructions to the flow of the monsoon water into its natural outfall.

The village drainage having been obstructed in its natural course in the manner described above, an attempt has been made, probably by the Municipality, to direct the same towards the east, that is, in a direction opposite to its water-level, so as to make it fall into the khal near its mouth; but it has proved ineffectual, as the level of the village near this outfall is several feet higher than that near the railway line; so that, instead of draining the village water, the river water at times of high flood enters the village through it.

If, instead of the fruitless effort to divert the natural course of the water towards the east, a deep drain be cut by the side of the Railway line, having a proper slope towards the khal, and all the big drains of the village be joined to it by means of culverts in the road above alluded to, and if also the cross roads in the interior of the village be provided with culverts, the original drainage of the village would then be restored, and thereby prevent the recurrence of the epidemic, which, be it observed, broke out immediately after these obstructions to the drainage were offered.

Circular No. 28, dated Calcutta, the 7th August 1877.

From—A. MACKENZIE, Esq., Officiating Secretary to the Government of Bengal,

To—All Commissioners.

I AM directed to request that you will call the special attention of the District Officers and Municipal Commissioners of your division to the provisions of Act VI (B. C.) of 1873, so far as these furnish a means of improving the drainage of town and village sites.

2. It is a recognized fact that much unhealthiness is caused by obstructed drainage and consequent dampness of the sub-soil; and although the Lieutenant-Governor is not prepared to undertake the impossible task of draining at the expense of the State all the unhealthy districts of Bengal, he believes that very much may be done in the way of improvement by well-directed local effort, and without very great expense.

3. Within the limits of regularly constituted municipalities, it is in the power of the Commissioners to effect improvements and remove obstructions, so far as their funds will allow and the provisions of the Municipal Act permit, and they have also very extensive power of coercing private owners. They should be stirred up wherever necessary, and called upon to devote special attention to this branch of their town conservancy.

4. But there may be cases even in towns to which the Municipal Act will not apply, and in which it is not proper that the cost of improvements should fall upon the rate-payers. There are also numerous villages outside municipal limits possibly suffering from the effects of obstructed drainage, and the health of a municipality may be affected by evils lying beyond its own jurisdiction. In such cases the provisions of the Embankment Act furnish a ready remedy.

5. By that Act a water-course is defined to include a line of drainage, weir, culvert, pipe, or other channel for the passage of water, whether natural or artificial. Under section 4 the Collector has power to cause to be removed or altered "any obstruction of any kind which interferes with the general drainage of any tract of land." He may construct any water-course, or effect any alteration in any public water-course, when this is required for the improvement of the health of any village. He may call upon

the person in charge of any road which interferes with the drainage of any tract of land to alter such road, or to construct any water-course under or through such road; and if the person so called upon fails to obey the order, the Collector may carry out the work at his expense, so far at least as it was necessitated on account of insufficient provision having been made at the time of constructing the road for the natural drainage then existing.

6. The Act gives the Collector ample powers for carrying out any works of the above description, and for assessing the cost, where individuals are not liable, upon the estates and tenures benefitted thereby.

7. There is nothing to prevent a municipality, or any other public body or individual, from moving the Collector to take action under the Act; and the Collector has always at his disposal the professional services and advice of the officers of the Public Works Department.

8. The Lieutenant-Governor, as he has already said, believes that it is by judicious local action that the evils referred to in paragraph 2 of this letter will most effectually be met; and he desires to call the special attention of all Commissioners, District Officers, and Municipalities to the remedies that already lie open to their hand.

9. At the same time, it must always be remembered that much harm may be done to individual interests, and much waste of public money may be caused, by hasty and ill-considered action. In every case there must be careful and intelligent enquiry as a preliminary to remedial measures, and there should be a reasonable certainty of positive good as their result. The provisions of the Board's circular order No. 3 of May 1875 will also have to be borne in mind by Collectors.

Memorial of the Bali Rate payer's Association regarding the Epidemic Fever at Bali.

To His Honor the Lieutenant-Governor of Bengal.

THE humble Memorial of the Bally Rate-Payers' Association most respectfully sheweth:—

That your memorialists feel grateful to your Honor for the appointment of a Committee to enquire into and report on the

causes of the epidemic fever in the metropolitan districts. The town of Bally has been afflicted with this fell disease since 1873, and though numbers of persons, men, women, and children have been carried away by it, and many are still suffering from it, this is the first time that Government has been pleased to take any notice of their condition. But your memorialists deeply regret to state that the hurried and imperfect manner in which the Committee seem to have conducted their inquiry, fills them with an apprehension that the Committee have not been put in full possession of the facts of the case, and that their conclusions might, therefore, have been based on imperfect data. The Committee without giving any previous notice, came only for two hours, visited only the north-west corner of the town, and after questioning a few men whom they chanced to meet, they went away; and it might be easily imagined whether such inquiry could be at all satisfactory, far less conclusive.

Your memorialists are humbly of opinion that the present unhealthiness of the town is mainly, if not wholly, due to obstructed drainage. The town being situate on the western side of the river Hughly, its drainage level must necessarily be towards the west, and this is clearly evidenced by the presence in that direction of the paddy fields and *jullas*. The East Indian Railway Line, which passes between the town and the said paddy fields, was provided with large culverts expressly designed to allow free egress to the drainage of the town into those paddy fields and *jullas*. So no great impediment was offered by the Railway to the drainage of the town finding its natural outfall. In 1872, however, the Railway surplus lands lying between the town and the line, and over which the drainage of the town flowed in its passage to the culverts in the Railway, was sold by Government, to private individuals, and the purchasers have since, raised those lands by converting them into several tanks and gardens, thereby completely preventing the drainage of the town from finding its way into the culverts. Further, since the construction of the Railway a portion of the drainage of the town used to find its way into the Bally Khall through a culvert in the station road made for the purpose. But the drain beyond the road, which conducted the drainage from the culvert into the Khall, has been gradually filled up at its mouth, without any notice being taken of it. The result is that the drainage can no longer find its way

into the Khall through the above mentioned culvert. Obstructions to drainage have been also offered by raising the level of a number of *kutchas* roads, crossing the lines of the drainage. The drainage used to find its way towards the west by either flowing over them or making breaches in them.

Now, these roads have been raised and the breaches filled up, substituting for them pipes of very small diameter, quite insufficient to give free vent to the drainage. The drainage of the town being thus shut out from its natural channels, a road running parallel to the Railway line, which was *kutcha* before, was raised and partly metalled and provided with drains on either side by the Howrah Municipality in the early part of 1873. The drain on the east side of this road was connected with the drain on the south side of the Choytulparah road, with a view to conduct the drainage of the whole town to the Khall through a culvert under the Station road, known as Gopi Saheb's culvert situated almost on the north-eastern extremity of the town. But the direction, which the Municipality designed to give to the drainage of the town, being diametrically opposite to its natural drainage level which, as before observed, is from east to west, the monsoon water cannot run out of the town and is to a great extent absorbed in the subsoil; and as a natural consequence the town has become unusually damp. It is also worthy of notice that the town has become unhealthy since September and October of 1873, the very year in the early part of which the drainage of the town being cut off from its natural level towards the west, was attempted to be diverted to a diametrically opposite direction, *viz.*, towards the culvert situated almost on the north-eastern extremity of the town.

Your memorialists would also desire respectfully to submit that the culvert in the Choytulpara road, through which the drainage of the whole town is designed to pass to the drain on the other side of the road in its way to its ultimate outfall, the Bally Khall, measures only 4 feet in width at the base and 3 feet in height. Your memorialists need hardly say that the capacity of the culvert is totally insufficient to convey to its intended outfall the rainfall over the whole town, covering an area of nearly a mile and a half square, the rainfall being not unfrequently from two to three inches within 12 hours. The

consequence, as is naturally to be expected under the above state of things, is that the monsoon water not finding easy egress through that culvert, accumulates in different parts of the town and settles in the subsoil. Your memorialists would also beg to submit that the channel, through which it is now designed to drain the whole town, remains quite inoperative during the flood tides, that is, for 7 to 8 hours in every 24, when instead of serving as channel of drainage, it, on the contrary, brings more water into the town than it can convey out of it in the course of a day.

Your memorialists venture to solicit that if the above facts have not been noted by the Committee, a fresh inquiry may be made to test the truth of their statements.

That as the disease has been making serious ravages every year, your memorialists look up to your Honor for the preservation of their health and life. They accordingly would earnestly pray that due steps may be taken for the removal of the present obstruction to the drainage of the town, and for the adoption of such other remedial measures as to your Honor may seem fit.

And your memorialists, as in duty bound, shall ever pray.

(Sd.) SRICHARN MUKERJI,

Hony. Secy., Bally Rate-Payers' Association.

Dated Calcutta, the 26th August 1877.

From—A. S. LETHBRIDGE, Esq., M. D., Offg. Sanitary Commissioner for Bengal,

To—The Secretary to the Government of Bengal.

WITH reference to your endorsement No. 2371, dated the 6th instant, I have the honor to report that I held a local inquiry at Bally regarding the statements made in a petition addressed to His Honor the Lieutenant-Governor by the Rate-payers' Association.

2. To enable the representatives of the rate-payers to be present the day selected for the inquiry was Sunday, the 19th instant, and due notice was sent by the Magistrate to the Secretary of the Association. The amount of rainfall for some days previous having been unusually heavy, the day named was a

most favourable one for any inquiry into obstructions to drainage.

At the meeting the Municipality of Howrah was represented by the Chairman, Mr. Pellew; the Secretary, Mr. Donnithorne; and the representative of Bally, Baboo Juggut Chunder Banerjee, Honorary Magistrate.

Mr. Whitfield, an officer particularly well qualified to speak on the subject of drainage, was present to render his professional assistance, and the Rate-payers' Association was represented by the members mentioned in the margin.

Baboo Sri Churn Mookerjee	3. It is necessary here to state
„ Berpasur Chatterjee.	that the so-called Rate-payers' Asso-
„ Purno Churn Butta-	ciation is a self-constituted body,
charjee.	which does not actually represent
„ Nund Lall Buttacharjee.	the rate-payers of Bally, a large
„ Nemi Churn Banerjee.	section of whom disown all connec-
„ Brindabun Chunder	tion with it and its proceedings.
Mookerjee.	
„ Obinash Chunder	
Goshain.	
„ Bhokah Nath Chuker-	
butty.	
„ Grish Chunder Ghosal.	

Both Mr. Pellew and Mr. Whitfield will bear me out when I assert that it would be difficult to meet a body of men so ignorant of the subject of drainage.

4. The inquiry commenced by my reading to those present the petition, and noting at the time the different points that called for investigation. Before proceeding to the localities mentioned, it was necessary to ascertain the truth of the charge made against the late Drainage Committee, which is contained in the following words of the petition:—"But your memorialists deeply regret to state that the hurried and imperfect manner in which the Committee seem to have conducted their inquiry fills them with an apprehension that the Committee have not been put in full possession of the facts of the case, and that their conclusions might therefore have been based on imperfect data. The Committee, without giving previous notice, came only for two hours, visited only the north-west corner of the town, and after questioning a few men whom they chanced to meet they went away; and it might easily be imagined whether such an inquiry could be at all satisfactory, far less conclusive." Thinking that the truth could best be elicited by a series of questions put to the

rate-payers' representatives themselves, I asked them to answer the following :—

- (1) Are you aware that before the Committee met at Bally that place was visited for three or four days by one of the members, Assistant Surgeon • Amrito Lall Mozoomdar, who made an inquiry into the drainage, the history of the fever, and the present health of the inhabitants, by examining the locality and a number of people, including the medical men and native gentlemen mentioned on the margin. and that he also medically examined the boys of the Bally school ? *Answer.*—No; they were not aware of it.

(2) Are you aware of the fact that the Assistant Surgeon submitted a full report on the subject, which is now in my hand, and which was laid before the Committee ? *Answer.*—No.

(3) Are you aware that a Sub-Committee, consisting of all the native members—Baboo Peary Mohun Mookerjee, Hem Chunder Kur, and Amrito Lall Mozoomdar—spent a day in Bally for the purpose of gathering information for the Committee's meeting ? *Answer.*—No ; but some of those present had seen them coming from the station.

(4) Are you aware that Rajah Digumber Mitter was represented at the Committee's local inquiry by a special agent armed with a memorandum and plan from himself ? *Answer.*—Yes.

(5) Are you aware that your own Honorary Secretary, Baboo Sri Churn Mukerjee, the gentleman whose signature is on the petition, was present when the Committee met at Bally, and that he made no remarks or suggestions at the time. *Answer.*—Yes.

(6) Are you aware that when the Committee met all the municipal officers, including the representative of Bally, Baboo Juggut Chunder Banerjee, were present ? *Answer.*—Yes.

(7) Are you aware that the Committee walked on foot for nearly four hours wherever Rajah Digumber Mitter's agent chose to take them ? *Answer.*—No.

(8) Are you aware that before coming to any conclusion the

Committee had a careful survey made and levels taken of the part of Bally in which the drainage was said to be obstructed ?
Answer.—No.

(9) Not being aware of all these facts, which took place in your little town, and not having taken any trouble to ascertain them, do you consider that you were justified in giving publicity to the untruths contained in the passage I have already quoted ?

The answer to this question was, as might be expected, an unsatisfactory one. "They did not mean what they had actually written : if the statement made was a falsehood, there was an 'if' somewhere at the end of the petition which qualified it."

5. The next subject referred to in the petition is the present state of the general health. As I particularly requested to be shewn every case of sickness in the houses passed during a five hours' walk through the town, I am in a position to speak with some confidence on this subject. There is little doubt that the people have suffered more or less severely from malarious fever for the last few years; but during my visit, with the exception of the quarter known as Barrackpore, all the cases seen (ten or twelve) were old standing cases of enlarged spleen, the result of attacks of fever in previous years. In Barrackpore there were a number of fresh cases of ague of a mild type; but, strange to say, all those sick were residents of pucca houses situated on the banks of the Hooghly, and quite beyond the influence of the alleged obstructions. The conditions under which these people lived were highly favourable to the development of malaria: the houses were damp, being surrounded by trees and vegetation, which effectually prevented either the sun or wind drying them. The overcrowding in the houses was said by the medical pretitioner in charge to be serious, being due to the practice of having three and four families all living together. From the general appearance of the inhabitants of Bally, I should say that the place is comparatively healthy. In another month or so the usual malarious fever of the country will, no doubt, make its appearance; but there are no indications that it will assume the character of what has hitherto been known as epidemic fever.

6. Under the present drainage system, which removes the water from the railway embankment to the Bally Khal, the tanks and gardens constructed on the railway surplus land cannot

possibly obstruct the drainage. Regarding this point a discovery has been made which completely settles the point as regards the best outfall for the drainage of Bally. The enclosed sketch, giving levels, was made by Mr. Whitfield, and he has forwarded it with the following remarks :—

“These levels completely dispose of the question of obstructed drainage in its natural outflow towards the jheel, for, as shown by the level heights, the water in the jheel is 13·02, and that in the side drains of the road 12·22 and 12·25, falling down to 11·12 at the junction of the Choytalpara road. The water in the drain channels is therefore from nine inches to one foot ten inches below the present level of the water in the jheel : by the middle of September the difference will have increased by at least a foot more. It follows, then, that if the only outlet of the drainage had been into the jheel, supposing the railway and all other obstructions to the “natural drainage” to be swept away, the level of water throughout Bally would be from nine inches to two feet higher than it now is ; and in the middle of September, when the water in the jheel has risen, as it will do a foot higher, then the water in Bally would be from one foot seven inches to three feet higher than it now is. Moreover, if a connection be made between the jheel and the roadside drains, the jheel would drain into them.”

7. The unusual rainfall enabled me to judge how the present drainage system was working, and I can assert with confidence that I have not seen a better drained country town in Bengal. The drainage being carried on by cutcha drains, they naturally require looking after every year to keep them open. This the Municipality has on the whole done well. In four or five places only did I see that petty obstructions caused the water to stand in the side ditches. The culvert near the railway-station, which is referred to in the petition, was not acting, and the result was that about 4 beeghas of low lying land, out of which the earth had been taken for the main road, were under water. As will be seen from the enclosed sketch, all this area is entirely isolated from the main drainage system, and is at the extreme corner of the Municipality. The manager of the Bally Mills was not at home, and I was in consequence not allowed on the premises ; but Mr. Pellew has promised to examine the locality, with

the view of ascertaining the cause of the obstruction.

8. There is a gross misstatement in the petition regarding the flood water passing up to the town through Gopi Sahab's culvert. Before the date of this petition a self-acting sluice was put in to prevent the water from finding its way in, and I saw that it effected its purpose well. As regards the culvert in the Choytalpara road, the size (1 foot by 3 feet) can be proved mathematically to be sufficient to drain a much larger area than that of Bally; and that it did so effectually, I myself witnessed during a heavy shower.

9. It is asserted that epidemic fever first appeared in 1873, and consequently followed the sale of the railway surplus lands: As a fact it was very severe in 1872.

10. As regards all other points, I would refer to the Drainage Committee's report, as being a fair and unprejudiced view of the drainage system of this town. Indeed I cannot help saying that the place is so effectually drained that opponents of the obstructed drainage theory might well take it as an instance of fever occurring in a properly drained locality. In conclusion I desire to express my obligations to Mr. Pellew and Mr. Whitfield for their great assistance.

Dated Bally, the 25th August 1877.

To—His Honor the Lieutenant-Governor of Bengal.

THE memorial of the undersigned inhabitants
and rate-payers of Bally, in the district
of Howrah—

MOST HUMBL Y SHEWETH :

THAT your memorialists beg most respectfully to protest against the petition of the so-called Rate-payers' Association, dated the 23rd July 1877, which was presented to your Honor without the knowledge and consent of your memorialists.

That the said Association is not recognized by all the rate-payers and inhabitants of Bally, and that they are not represented by the Association.

That the members of the Association have not been elected by the rate-payers and inhabitants of Bally.

That your memorialists are therefore not liable for the acts of the said Association.

That your memorialists always represent their grievances, when necessary, directly to the proper authorities, and not through any Association, as there is no such recognized Association at Bally.

That your memorialists did not know anything about the petition dated 23rd July 1877 when it was presented to your Honor, and wherein great dissatisfaction was expressed against the investigation and inquiry held at Bally by the Drainage Committee.

That on the 19th day of the current month, when the Sanitary Commissioner, Executive Engineer, and the Magistrate of Howrah, came to Bally to inquire about the said petition of the 23rd July last, your memorialists first became aware of the said petition.

That your memorialists express their deep regret at the conduct of the said Association in giving your Honor so much unnecessary trouble in a matter which was already carefully investigated by the Drainage Committee on a previous occasion to the satisfaction of the inhabitants.

Your memorialists therefore humbly beg to submit that, under the circumstances stated above, the statements contained in the said petition dated 23rd July 1877 are incorrect and unfounded, and that your memorialists are not responsible for them.

And your memorialists, as in duty bound, shall ever pray, &c.

SREEKRISTO BANERJEE,
MADHUB CHUNDER BANERJEE,
GOOROODOSS MOOKERJEE,

and 255 other inhabitants and rate-payers of Bally.

FINANCIAL DEPARTMENT—SANITATION.

Calcutta the 3rd September 1877.

RESOLUTION.

READ—

The memorial of the Bally Rate-payers' Association, objecting to the sufficiency of the inquiry made by the Special Committee appointed for that purpose into the condition of the drainage of the town of Bally.

READ—

A letter from the Officiating Sanitary Commissioner, dated 26th August, reporting the result of a further local inquiry held by him with reference to the statements in the above memorial.

READ also—

A memorial from 255 inhabitants and rate-payers of Bally, repudiating the statements made in the memorial above quoted.

THE Lieutenant-Governor considers that Dr. Lethbridge has conclusively shown that the statements made in the first memorial, with reference to the obstructed condition of the drainage of the town of Bally, and the effect of this upon the health of

the place, are entirely unwarranted by the facts ; and that there is no reason whatever for doubting that the report made by the Special Committee was both based on sufficient inquiry, and correct in its conclusions.

2. It also appears that the statements in the memorial of the so-called Rate-payers' Association are repudiated by a large number of the leading inhabitants and rate-payers.

3. Under these circumstances no further action on the part of Government appears to be called for.

By order of the Lieutenant-Governor of Bengal,

A. MACKENZIE, .

Offg. Secretary to the Govt. of Bengal.

REVIEW.

Essays on Medicine: Being an Investigation of Homœopathy and other Medical Systems. By William Sharp, M. D., F. R. S., &c., &c. The Tenth Edition. London. Henry Turner and Co. 1874.

Essays XXVI-XXXII. (1875-1877.)

In our issue of Oct. to Dec. 1874 we reviewed this work as far as related to the author's review of Hahnemann's system. We reserved the remaining portion of the volume, full one half, containing the author's development of the homœopathic system in its double aspect of the law and the dose, for review in a subsequent number. Since the publication of the volume Dr. Sharp has added six more essays, the last, the 32nd, containing his experiments and observations on the "Actions of One Dose." In this concluding Essay the gifted author takes leave of his profession, of scientific research, and, indeed, as it appears to us, of all secular work. As this essay testifies, the author, though past three score years and ten, does not seem to have lost the vigor and energy of his mind. We are unwilling to disturb the rest which he has proposed to himself for the remaining span of his life and which he richly deserves. But he will pardon us if the same spirit of loyalty to truth, which urged him to subject to rigid scrutiny what Hahnemann taught, actuates us to subject to as rigid scrutiny whatever he himself has advanced.

We have to consider nineteen Essays, commencing with the xivth. We shall make one remark *in limine*: As separate essays, each of them is complete in itself, and is exquisite in matter of fact and argument, and lucidity of statement of both fact and argument; but taking them in succession and together we meet with repetitions which had better been avoided in their collected form. It appears, however, that the author has been content to leave them as they first appeared, as "essays" only, instead of attempting to reduce them to a systematic and compact whole as becoming a scientific treatise. But this process would have shorn the essays of much of their charm and sparkling liveliness, and we therefore do not regret, much less blame the author, that this has not been done.

It is difficult to say whether sectarianism acts as a check or as a help to progress. We should say it does both. In the long run it does help, though in individual cases it as certainly arrests progress. But whatever sectarianism may be, whether as an arrester or a helper of progress, homœopathy has not escaped its influence. This sectarianism commenced in the life-time of its immortal founder, and in fact was inaugurated by himself. Without justifying, we may excuse the spirit of intolerance which Hahnemann manifested. His was a peculiar position. He had made a discovery which, in point of immediate importance to the human family, was the greatest ever made,—a discovery which not only shook Old Medicine to its very foundations, but substituted for those chimerical and fanciful foundations, positive and stable foundations of irrefragable fact and unalterable law. He had the uncommon privilege of watching the progress of his discovery for nearly half a century, during which he had the high satisfaction of seeing it more and more firmly established. The practical fruits it bore surpassed his most sanguine expectations. Not only were curable diseases healed in the shortest possible time and in the most pleasant manner, but the whole host of diseases which were looked upon as incurable obeyed the sway of the new therapeutic law. It is no wonder then that Hahnemann should have thought that the point from which he viewed his discovery was the right, and the only right point of view. And it is no wonder that he should have thought it his duty, in the interests of science and of humanity, to jealously guard the discovery from perversion.

This perversion of his doctrine Hahnemann dreaded most from hypothetical speculations about the nature of disease by pathologists. Hence his denunciation of pathology which, in his day, was extremely imperfect, consisted chiefly of conjectures based upon preconceived ideas, and was therefore ever-varying. Hence the stress he laid upon symptoms which were nature's own modes of expression of the morbid conditions, and which, therefore, if considered not singly but in their totality, could not mislead. It is true that by symptoms he understood all the phenomena of disease, all "the changes in the health of the body and of the mind which can be perceived externally by the senses, that is to say, which are felt by the patient himself, remarked by those

around him, and observed by the physician" (*Organon* § vi), it is doubtful if in ignorance of the revelations which the microscope have made in these days about the ultimate structure of the organs and tissues, he had any right conception of what pathology could be when built upon those revelations. That probably he had not this conception may be understood from his continually speaking of the "invisible interior," the "hidden interior," of the organism. And truly before the application of the microscope to the discovery of the ultimate structure of the organs and tissues, the interior of the organism *was* "invisible" and therefore "hidden."

This was the first point of divergence between him and those of his followers who wanted to dive deeper than the mere symptoms. This divergence has continued down to the present day, and we have now amongst homœopaths two principal sections. In one we have those who literally adhere to every dogma and word of the Master and call themselves Hahnemannians, in the other we have those whom we may call progressive homœopaths, who, while they hold to the law, nevertheless avail themselves of every aid furnished by the collateral sciences, above all by a sound pathology.

It is difficult to define the position which Dr. Sharp occupies in the ranks of homœopathy. He does not belong to the first section, but he can not be said to belong to the second either. He has openly and strongly (too strongly we should think) disclaimed discipleship to Hahnemann, though he does not seem to disclaim his alliance with the followers of Hahnemann, for in his letter to the President of the last British Homœopathic Congress held at Liverpool in September 1877, he has said, "it is certain there is something in homœopathy worth contending for, and not only worth contending for, but also worth bearing shame and reproach for." He almost stands alone in the consideration of "what that something is." He has pursued the investigation of homœopathy in the hope of discovering that something with a devotedness, enthusiasm, and diligence worthy of the investigation of truth. His labors have not been, as such labors cannot be, in vain. How far they have been successful in purging homœopathy of its errors, and in bringing light into the domain of therapeutics, it will be our endeavour to show.

Dr. Sharp has given an excellent summary of the results of his investigation in the last essay of the volume, and a final summary in the 32nd or last essay with which he has intended to conclude his labors. The first summary is the following :—

If my readers will look back upon the work done in these *Essays*, they will see that an attempt has been made by torch light to take an inventory of the furniture in the temple of therapeutics.

They will see that the vestibule of this temple is furnished with *the proving of drugs in health*. We have fixed our eyes with great earnestness on many of the objects which this spacious vestibule contains.

What the prism is to the sun's light, the healthy body is to drugs. As experiments with the prism separate and exhibit the various colours in the compound ray of white light, so experiments on the healthy body exhibit the various actions of different drugs and doses, so that they can be distinguished and defined. Those who have tried these experiments can recognise them in the pictures of them given in books ; others can only obtain an imperfect acquaintance with them from the pictures ; this, however, is sufficient to be a useful guide. But these are "stringent times ;" like those of which it has been said that "no algebraic formula, but only *direct vision* of the relation of things would suffice a man ;" * and we are all bound to obtain this direct vision to the extent of our ability and opportunity.

The first chamber in the temple is furnished with *the local action of drugs*. The general fact of the action of each drug on a portion only of the living body, and that whether the body is in a sound or unsound condition, has been made abundantly manifest. "It must be confessed to be so probable that there can be no argument to disprove it.† Indeed, it seems impossible to entertain any doubt of its truth. The use of this general fact or law in therapeutics has been called *Organopathy*.

We have entered the next chamber, and are not yet so familiar with its furniture. We shall become so in time. It is occupied with the various *kinds of actions of drugs*. We have to learn *what* they are, not *how* they are produced. It appears that each drug has two series of doses having contrary actions, or actions showing an opposite tendency or direction. The series of larger doses act in one direction, that of the smaller ones in the opposite. It appears also that each organ or part of the body has its own two ranges of doses possessing these contrary actions. This general fact or law has been called *Antipraxy*.

The action of the larger doses is more or less poisonous in health, and it is injurious in disease. It resembles the action of other causes of disease. The effects it produces indicate the various *drugs to be given as remedies* in

* Thomas Carlyle's 'Letters on Cromwell.'

† Pearson.

smaller doses for similar diseases of the locality where the action takes place. This chamber of the temple is *Homœopathy*.

The action of the smaller doses in the contrary direction to that of the larger ones, indicate the *doses to be given as remedies*. The action being in the opposite direction to that of the larger doses, which is similar to the disease for which the drug is prescribed, must also be in the opposite direction to that of the disease. This chamber is *Antipathy*.

The vestibule and four chambers of this temple have been entered, and explored to the extent the torch light has permitted. Innumerable objects of value and usefulness remain in them not yet seen nor described.

Other chambers in the penetralia of the vast temple of healing are yet unexplored. New light-bringing experiments will be needed. Guided by these torches, may many enter in and advance further with reverend steps !

The final summary is given as follows :

With respect to drugs—

That all drugs act locally, *i. e.* on some parts of the body in preference to other parts ; and that each drug may be distinguished from the rest by this local action.

That drugs are to be classed among the causes of disease ; and that all the common causes of disease act, in the first instance, in a similarly local manner. So that the common division of diseases into general and local, which is still maintained in the official *Nomenclature of Diseases* by the Royal College of Physicians, is in science incorrect, and in practice hurtful.

With respect to doses—

That the action of doses of drugs is governed by law ; and that for the practical use of them, in prescribing medicines for the sick, they may be arranged in three classes :—

1. A series of small doses having one action in a certain direction.
2. A series of large doses having also one action, but in an opposite direction.
3. A series of middle doses which have both these actions.

For future workers “there are,” he says, “many stirring and important questions waiting for their answers ; for example—

The conditions—such as the predisposition, the sensitiveness, or the “toughness” of individuals—which influence the action of drugs.

How the kind of action varies with each drug, with each organ, and with the condition of the organ, which is acted upon.

The limits beyond which the best remedy has lost its healing power.

The repetition of the dose.

And, lastly, the transcendental question of infinitesimal doses, which he has scarcely had time even to touch.”

Dr. Sharp thus claims as his discoveries in therapeutics,—the local action of drugs which he calls *organopathy*,—the opposite actions of larger and smaller doses which he calls *antipraxy*,—and the double actions of middle doses, which he calls *dipraxy*. In the first of the summaries extracted above, *homœopathy* is said to form a chamber in the temple of therapeutics. It stands as a corollary to *organopathy* and *antipraxy*. It is not mentioned at all in the second summary, but as it is not expressly and openly dismissed, we may assume the author still considers it as an indispensable chamber in that temple.

The first indication of *organopathy* is seen in Dr. Sharp's masterly reply to Sir Benjamin Brodie's Letter on (against) Homœopathy in Frazer's Magazine for September 1861. A few extracts from this reply with additional matter constitutes the xivth Essay. In the 'Reply' the laws of healing by drugs is expressed in two propositions:—

I. *All drugs given in health act partially, or select certain portions or organs of the body upon which their injurious action is produced.*

II. *Drugs are to be used as remedies for diseases of the same parts or organs as those upon which they act as poisons in health.*

These two propositions were combined into one as follows:—
 "Drugs select certain organs to act upon, both as poisons and as remedies, these organs being the same for each drug in both its characters, as a poison and as a remedy." And then it was added that "the keynote of this proposition is *local action*, and the rule is that the local action shall be *on the seat of disease*." The proposition was still further widened, thus—"All noxious agents, the causes of diseases as well as drugs, act on the principle of selection, *e. g.*, the poison of scarlet fever selects the brain, throat, and skin, and a drug will act as a remedy in this disease if it has the power to select the same organs."

In the 'Reply' he speaks of the 'Materia Medica' he has been sometime engaged upon, and introduces to Sir Benjamin's notice Gold and Titanium, both as poisons and remedies, as examples of *his* method. He is evidently impressed with the importance of this method of constructing the Materia Medica, and is anxious to urge that importance upon the new school. "The opportunity," says he, "for which I am thus indebted to

you, also enables me to convey to my own party, through this small specimen, some notion of the plan upon which I am working; and they can express to me, in any way they think proper, their opinion as to the utility of such an undertaking, and whether they are disposed to encourage me to persevere with it or not."

In Essay xiv have been added six more metals, viz., silver, copper, iron, lead, tin, mercury. In a note (1874) at the end of this essay the author says that "this endeavour to ascertain the localities of the action of drugs was made with considerable diligence about fourteen years ago. Nearly all the drugs which, up to that time, had been experimented or proved in health, were included in the enquiry." Our readers will no doubt agree with us in regretting that Dr. Sharp has not yet thought fit to publish this "*Materia Medica*," which cannot fail to be both interesting and instructive, notwithstanding that the *compendium* of the actions of drugs given therein may be, as he fears "only tentative, and probably often erroneous."

The first mention of *Organopathy* is in Essay xv in which the author treats of Pathology, and which was first published in 1865. He avows that he "dislikes sectarian names," but says, "it is impossible to avoid them." In this Essay homeopathy and organopathy are looked upon as the same thing, for it is clear that, if the symptoms of the drug given as a remedy be really the same as, or very similar to, those of the disease for which it has been prescribed, the organs acted upon by the drug must generally be the same, or nearly the same, as those in which the disease is seated." *Organopathy* is substituted as a more definite term. The determination of the organs affected by drugs is made in the same way as the determination of the organs affected in disease, namely, by a study of the symptoms, of the morbid conditions and appearances after death, and by a chemical analysis of the organs.

The idea of *Organopathy* is fully developed in Essays xvii and xviii. Dr. Sharp admits that "the experience of three thousand years has rendered hopeless the attempt to discover the inner nature of diseases, and has justified the inference that a pathology of this kind can never be a safe guide to therapeutics;" and he admits that "if the alternative were this,—either to adopt one of

the many hypotheses upon which a method of treatment has been based, which hypotheses may be as beautiful but certainly as unsubstantial as mountains of clouds; or be content to prescribe for symptoms," he would certainly sit on the latter as the best horn of the dilemma. But we need not be content here: "There is a third path which, while it cannot be objected to as superficial, cannot, on the other hand, be condemned as speculative and hypothetical." This is to discover the *seat* of diseases. He anticipates the objection that might be made on the ground "that there are many cases in which we cannot find the seat of the symptoms," and admits "that till we have found this out, there is no better way of prescribing than for the symptoms themselves." But continues he, "our present ignorance ought to stimulate to exertion; not to stifle it. Already we know the seats of some symptoms; we must labour till we have found the seats of them all."

Dr. Sharp states the following as among the advantages of his *organopathy* over that of Hahnemann's homœopathy:—

1. *It is more definite*, for it reduces the similarity into identity. Resemblance admits of degrees, but identity of none.

2. *It recognises local action*, which, according to our author, has been overlooked by Hahnemann.

3. *It turns diagnosis to better account*. Diagnosis consists in ascertaining the situation and extent of a malady, and is the only foundation of prognosis which must be given to satisfy the anxiety of the patient and his friends.

4. *It helps to remove a difficulty*, the difficulty which the *materia medica* presents of several, especially the more powerful drugs, having opposite actions attached to them, which is "necessarily perplexing to those who wish to select a remedy according to the rule *similia similibus*."

5. *It prevents the accumulation of useless symptoms*, which is really a growing evil, and which can only be prevented by recognizing the local action of drugs.

As illustrations of the utility of *Organopathy*, Dr. Sharp cites the treatment of nausea and vomiting, and of coughs on that principle. The former may depend upon some disturbance in the mind, or in the brain, or in the spine, or in the uterus, or in the stomach, and the indication for *ignatia*, or *belladonna*, or *nuxvomica*, or *sepia*, or *ipécacuanha*, becomes very plain. Again, he has repeatedly seen coughs having their origin in the stomach cured by *pulsatilla*, others having their origin in the liver cured by *mercurius*, and others that had their origin in the uterus cured by *sepia*.

Dr. Sharp is not satisfied, and very properly, with merely ascertaining the organ that is affected. He advances a step

further. He says, "we have next to consider that important organs are not simple but complex structures. Hence two questions arise, one in regard to the disease, what part of the ailing organ is affected? and one in respect to drugs (when more than one act upon this ailing organ) which acts upon the affected part? The former question obliges an accurate diagnosis in disease; the latter a similar accuracy in experiments in health."

In illustration of this advancing step in diagnosis and treatment, he observes:—

"The *brain* may be the ailing organ; but the part affected may be the arteries, or the veins, or the cerebral substance, or the membranes. And the drug should be made to correspond; and so this may be *aconite*, or *bryony*, or *opium*, or *phosphorus*, or *hellebore*, or *hyoscyamus*, or *stramonium*, or some other.

Or the *heart* may be the seat of disease; then it may be the pericardium, or the muscular fibres of the auricles or of the ventricles, or the lining membrane, or the nerves, or the valves. And the remedy may be *aconite*, or *bryony*, or *arsenic*, or *bromine*, or *digitalis*, or *kalmia*, or *bismuth*, or *spigelia*, or *bovista*, or some other perhaps yet unknown drug.

Or it may be a large *joint*, as the *knee*; and the part affected may be the cellular membrane, or the muscles, or the ligaments, or the cartilages, or the bones. And the remedies may be *arnica*, or *bryony*, or *rhus*, or *silver*, or *mercury*, or some other.

Or it may be one of the organs of the *senses*. Look at the eye, and it is required to find drugs which act upon the conjunctiva, the cornea, the iris, the lens, the humors, the retina and optic nerve, the sclerotic coat, the muscles. The organs of hearing, smell, and taste, and in fact all the parts of the body ask for similar attention."

According to Dr. Sharp the following are the three possible definitions the doctrine of homœopathy admits of:—

"The remedy for each individual patient must have, in its provings, similar symptoms; or,

It must be capable of producing a similar disease; or,

It must affect similar organs or parts of the body."

"The first definition," says Dr. Sharp, "is the final homœopathy of Hahnemann." The difficulties of the method of treatment based upon this definition are enumerated as under:—

1. It has led to an artificial and quite arbitrary arrangement of the symptoms of drugs, from which it is impossible to recognize the similarity with any actual disease which we may have to treat.

2. The symptoms being thus disjointed, and not referred to the morbid condition of which they are the signs; the selection of remedies must in the majority of cases be made on insufficient and even frivolous grounds.

3. "To carry out this method with the minuteness its advocates require, to a man engaged in extensive practice, is impossible."

4. "The symptom-method ignores anatomy, physiology, pathology, and diagnosis, and renders them useless."

5. Pathology and diagnosis being thus ignored, the prescriber may often overlook the distinction between idiopathic and sympathetic affections.

6. By inventing a pathological hypothesis for chronic diseases Hahnemann himself acknowledged the imperfection of the method.

7. "Lastly, the symptom-method of treatment renders the medical profession itself almost unnecessary."

The second definition is what Dr. Sharp himself gave in one of his earlier Essays in the following words:—"Every material poison (*i. e.* drug or medicine) gaining admission into the healthy body has a tendency to produce a diseased condition, evidenced by symptoms or physical signs, more or less peculiar to itself; and every such poison is the most appropriate remedy for a similar diseased condition which has arisen from other causes." And he thinks, and very rightly, that "if a true physiology and a true pathology, both as regards diseases and drugs, could be attained, the view set forth in this definition, would be the highest attainable perfection of therapeutics." But says he, "unhappily, the following difficulties stand in the way:"

1. A physiological difficulty, arising out of the fact that physiology is still often doubtful and imperfect.

2. A pathological difficulty, unavoidably attendant upon the imperfection of physiology.

3. The form of Hahnemann's provings presenting insuperable difficulties for pathological purposes.

4. Re-provings might remove the difficulty presented by Hahnemann's provings, but they are too scanty to furnish a complete pathological structure.

5. The very imperfection of physiology and pathology would stamp the character of imperfection upon re-provings even if they were complete so far as they go.

The pathological system, the highest perfection, of therapeutics, requires that "not only must the provings of drugs be arranged in a different form, but that also the auxiliary sciences of physiology and pathology must be further advanced," and the third definition is offered "in the hope that this desirable end will one day be attained." "It is not proposed," we are told, "as a finished system but as a preliminary step, as, in fact, what it professes to be, a *basis or foundation upon which a physiological and pathological structure may afterwards be erected.*" "For, it seems to me," he says again, "that if we will first labour to perceive the *localisation* of disease and of the action of drugs, we shall then be in a better position to pursue our enquiries into the pathological actions, or the changes of functions and structure, produced both by diseases and by medicines."

In reply to the objections against the method of treatment based upon this third definition, namely, which Dr. Sharp says "is reiterated, again and again, that diseases are not all local, nor is the action of all drugs," he remarks—

"When we have enumerated all the diseases of the digestive organs ; of the respiratory organs ; of the blood and its circulation, and the organs belonging to them ; of the brain, the spinal cord, and the nerves, cerebral, spinal, and ganglionic ; of the organs of the senses ; of the glandular apparatus, the secreting and excreting organs ; of the reproductive organs ; of the bones, joints, and muscles, and their appendages ; of the integuments ;—diseases necessarily and undeniably local—what remains ?

"And when we have counted all the drugs which act upon one or more of these sets of organs, in preference to others, how many remain ?

Essays xix-xxii are devoted to a discussion of the action of drugs, which is considered under the following heads :—

1. In what way is the action of drugs to be discovered ?
2. What is the action of drugs ?
3. How is the action of each drug to be distinguished from that of all others ?
4. What is the kind of action of drugs ?
5. What is the action of small doses ?

In reference to the first question the author enumerates the various ways by which the action of drugs has been attempted to be discovered, namely, by regarding them superstitiously, ascribing to them all kinds of virtues ; 2 by viewing them astrologically, that is by noting or rather conjecturing the astral influences by which they are governed ; 3. by studying them with reference to their sensible properties, such as form and colour, taste and odour ; 4. by studying their chemical properties ; 5. by studying their mechanical properties, such as angles, spiculæ, &c. ; 6. by studying their botanical relationships and characters ; 7. by arbitrarily fixing their properties according to the pathological notions in vogue ; 8. by studying them, empirically, that is, leaving their actions to be revealed by haphazard and chance ; 9. by studying them for their indirect action ; 10. by experiments on animals ; 11. by experiments on the sick ; 12. by experiments on the healthy.

Dr. Sharp shows that methods 1,2,3 have been entirely mistaken and vain ; that methods 4,5,6 have rendered but very partial service ; that method 7 has done more harm than good, though it ought to have been a good one ; that method 8, empiricism, has given us "a very large collection of useful facts, but which are not connected together by any chain of reasoning," that its condemnation has been pronounced by one of its greatest advocates, the historian Renouard, when he says "that the fundamental maxim of empiricism does not furnish any light to

direct us in such researches ; it does not at all indicate the route to follow for the discovery of curative means."

The study of drugs by experiments on animals, on the sick, and on the healthy, remains as the only method of their study by which the discovery of their actions on the living organism, in health and disease, is at all possible. Experiments on animals are, we think justly, condemned out of considerations of their cruelty and comparative inutility. And it is shown in a most conclusive manner that experiments on the sick, "which have been carried on for three-and-twenty centuries, have failed to establish a principle for the treatment of disease by medicines." Experiments on the healthy is the way proposed and entered upon by Hahnemann, and is the only way whereby to arrive at the pure and genuine actions of drugs.

In these experiments on the healthy we must avoid the two extremes of aiming at impossibilities and of stopping short of possibilities. We must not endeavour "to find out the manner in which drugs act, and we must go beyond the mere appearances or symptoms and attempt to discover their seat or the organs to which they belong.

The direct object and the use of these experiments in health are stated as follows :—

First. To learn the action of each drug by itself, unmixed with other drugs.

Second. To learn the action of drugs, uncomplicated with the symptoms of disease.

Third. To discover the specific action of each drug ; that is, to learn the organs upon which it acts, and the kind of action.

Fourth. To apply these discoveries to the treatment of disease ; experience having taught us that the same organs which are disturbed in health by certain doses, are silently and peacefully cured in disease, by certain smaller doses.

While we institute voluntary provings to elicit the actions of drugs we must not neglect to avail ourselves of the information derivable from cases of poisoning, from which may be learned generally the more severe effects of drugs. There are some drugs such as *belladonna* and *calabar bean*, some of whose effects may be learned from topical application ; there are others, such as serpent poison, which exert a most deadly influence when introduced through a wound, but which may be swallowed almost with impunity. These sources of information must not be forgotten. On the subject of provings Dr. Sharp very justly remarks,—“the undertaking is one which should be promoted by every member of our body, but it should be warily done, with a clear purpose in the mind, with thoughtful gravity, with active suspicion of error, and with freedom from bias towards any foregone conclusion.”

Dr. Sharp answers the second question, what is the action of drugs? in his usual exhaustive way. This action is firstly injurious in health. Dr. Sharp, however, takes care to distinguish drugs from those useful things, such as food, water, air, clothing, &c., which are not only conducive to health, but are the very necessities of life, but which by abuse may become the causes of disease. Drugs rank with malaria and contagions, because taken at all in health they give rise to disease, but differ from them by being remedies in sickness, so that the action of drugs while injurious in health is curative in disease. The action of drugs is, secondly, consecutive, following repetitions of doses or even one dose, and giving rise to a uniform combination and succession of symptoms, characteristic of derangements of a single or a succession of organs. Thus a few doses of rhubarb develop a condition analogous to typhus fever. "In lead poisoning there will sometimes be first, spasmodic pains in the bowels, or colic; then, dizziness and other symptoms of disturbance of the brain; then, local paralysis, as of the hand. Mercury generally acts first on the salivary glands, then on the liver, then on the throat, afterwards on the skin, and finally on the bones."

The action of drugs is local. Dr. Sharp does not know of "any drug which has a universal and equally powerful action upon all parts of the body. . . We have no such general action in any drug. If any one thinks that we have, he has only to name the drug." Again, drugs affect the same parts in disease as they do in health. This is proved by the evidence of both schools of medicine, though in opposite ways. He thinks Dr. Madden wrong when he said, "a drug may be perfectly incapable of acting on a certain organ while it remains healthy, and yet be capable of modifying to a great extent any morbid changes which it may be undergoing." We think he very rightly says, "if this be so, the provings of drugs in health is of little use. The labour, the suffering, and the loss of time which they entail, are endured in vain."

How is the action of each drug to be distinguished from that of all others? Dr. Sharp points out *three lines of separation*. The first is furnished by the affinity of drugs for particular parts or organs of the body, the affinity of one drug being for the brain, of a second for the lungs, of a third for the heart, and so on. When a number of drugs have an affinity for one and the same organ, the line of separation is furnished by the *manner* or *kind* of action. The third line of separation is furnished by the organs which are secondarily or subordinately affected, and which are found to be different with different drugs. Thus "a careful observation of these three differences—the organs acted upon primarily or most powerfully—the kind of action—and the organs acted upon secondarily or less powerfully, will be found to be

sufficient to distinguish one drug from another." Dr. Sharp gives the following diagram or table "as an example of the practical carrying out of these views:"—

LOCAL ACTION OF DRUGS.

BRAIN.	ITS PARTS.	KIND OF ACTION.	SUBORDINATE ACTION.
Belladonna.	Arteries.	Inflammation.	Throat, eyes, &c.
Opium.	Veins.	Congestion.	Heart, nerves.
Hellebore.	Absorbents.	Effusion.	Serous membranes.
Hyoscyamus.	Cerebral substance.	Visions.	Eyes, heart.
Cannabis.	Do.	Convulsions.	Urinary organs.
Narcissus.	Do.	Pain, insensibility.	Stomach, uterus.
<hr/>			
MIND. ¹			
Anacardium.	Memory.	Failure of memory.	Nerves of the five senses.
Aurum.	Imagination.	Dread of evil.	Reproductive organs.
Oleander.	Thought.	Inability to think.	Motor nerves.
Cotyledon.	Emotions.	Suppressed emotions.	Heart, lungs.
Ignatia.	Do.	Sorrow.	Rectum, spleen.
Mercurialis.	Do.	Excitement.	Mucous membranes.
<hr/>			
HEART.			
Aconite.	Arteries, muscle.	Excitement, depression.	Arteries, larynx.
Digitalis.	Left side.	Depression, excitement.	Kidneys.
Bovista.	Walls.	Hypertrophy.	Skin, uterus.
Spigelia.	Valves.	Valvular disease.	Eyes, ears.
Lachesis.		Chronic disease.	Throat, bowels.
Bromine.		Do.	Larynx, eyes.
<hr/>			
BLOOD.			
Ferrum.			
Rhus.			
Lycopodium.	Red globules.	Red globules increased.	Heart, arteries.
Titanium.	?	Typhus.	Joints, muscles.
Uranium.	?	Pus.	Liver, intestines.
Petroleum.	?	Albumen.	Eyes.
	?	Sugar.	Kidneys.
	?	Mucus.	Do., intestines.

From this table may be gathered the answer to the question—what is the kind of action of drugs? Dr. Sharp has, however, devoted a good portion of Essay xxii for a fuller discussion of the question. The starting point of the action of drugs, and of the kind of that action, is, according to him, the blood. "The phenomena of life," says he, "are a circle, and there is no visible beginning in

¹ So far as this is influenced by the brain.

a circle; but since we must begin our research somewhere, and since the blood is eminently the life, we may safely take the beginning of action to be in the blood. Here is the first meeting, the first impression, the first action, the first change from health, the first morbid phenomenon; the first link in the chain which connects the exciting cause with all the successive phenomena of any disease whatever. The condition of the blood, therefore, admits of as many alterations as there are kinds of substances which can enter into it and act upon its life. There will be as many different kinds of action as there are causes of disease, or kinds of drugs." The changed blood acts upon the bioplasm, the substratum or pabulum of the living organs, and simultaneously acts upon the nerves. The changes in the bioplasm give rise to the objective symptoms. The impressions upon the nerves conveyed to the brain give rise to the subjective symptoms.

We have not space in this number for even a rapid summary of the remaining topics dwelt upon in the "Investigation," and far less for a review of the author's views. We shall therefore resume and conclude the subject in our next.

Acknowledgment.

We have to acknowledge with thanks the receipt of the following publications, which we shall review at an early opportunity :—

A Manual of Therapeutics according to the Method of Hahnemann. By Richard Hughes, L. R. C. P. 2nd Edition. Part I. Henry Turner & Co. London. 1877.

Lectures on the Homœopathic Treatment of Acute and Chronic Diseases of the Chest, &c. By R. Douglas Hale, M. D., &c. 2nd Edition. Henry Turner & Co. London. Boericke & Tafel. New York. 1877.

On the Sources of the Homœopathic Materia Medica. Three Lectures delivered at the London Homœopathic Hospital. By Richard Hughes, L. R. C. P., &c. Henry Turner & Co. London. 1877.

A Lecture Addressed to the Medical Profession on the Place of the Law of Similars in the Practice of Medicine. By J. Gibbs Blake, M. D., &c. Cornish Brothers, Birmingham. Henry Turner & Co. London. 1877.

Papers read by Representatives of the British Homœopathic Society at the World's Homœopathic Convention. London. 1877.

Annals of the British Homœopathic Society, and of the London Homœopathic Hospital. Nos. xliii & xliiv, xlv. Henry Turner & Co. London. 1877.

Rough Notes on Human Osteology. By J. C. Roy, M. B., Assistant Surgeon to the Berhampore Hospital, and Professor of Anatomy and Midwifery in the Berhampore Medical School. Lucknow. 1877.

CLINICAL RECORD.

The following interesting cases have been supplied to us from Krishnagar by a pupil of ours.—Ed.

Hysteria.

This occurred in a married girl, aged about 16, and of respectable parents. She is naturally of a lively temperment, plump and full, and brought up in luxury. Sometime previous to the present illness she was suffering from leucorrhœa and menstrual irregularities. Immediately preceding her present illness, there was a family quarrel, and she received a sharp rebuke from her father. The latter circumstance touched her to the quick, and she felt quite mortified. For some days after she became dull and morose, with great aptitude to shed tears on the least provocation. Then she complained of palpitation of the heart with great anguish. And it was not long before the disease appeared in its full form. I saw her on the 2nd or 3rd day after the attack, and observed the following symptoms :—

The fit commenced with a sudden feeling of faintness and general languor. Then there was sobbing and heaving of the breast, followed by convulsions of an irregular character. There was lock-jaw, clenching of the hands, and spasmodically closed eyes. She threw her limbs in every direction with such quickness and force as to require four men to hold her in bed. The fits lasted about an hour or two, and at times even three hours. All attempts at making her swallow anything during the fits were fruitless. On the termination of the fits she remained prostrate and exhausted without the least inclination to talk to anybody, nor liking even the touch of any one. When her senses returned she wanted to drink water and desired to be fanned. The fits recurred two or three times during the day.

At the commencement I gave her *Ignatius* and *Belladonna* in alternation for a couple of days. Not deriving any benefit I gave her *Sulphur* for three successive days, having come to learn that she had some itch like eruptions on the body which were suppressed by external applications. Then I resorted to *Prussilla*, as the fits generally recurred in the afternoon, and she cried and laughed in turn during the fit. But nothing was beneficial till she had *Hyoscyamus* which stopped the fits at once, and she was well for a couple of days. On the 3rd day after this there was a thunderstorm, and it was during the violent and stunning noise of a thunderclap that she got the fit again; and the fits then began to recur with redoubled force. I tried *Aco.*, *Coff.*,

Plat., *Puls.*, *Nux v.*, *Stram.*, *Cocc.*, and *Lach.*, but to no purpose. The fits came on and went off as usual until I thought of *Graph.* which was selected from the following symptoms: 1. Feeble menses, appearing late, and being attended with pain; 2. Leucorrhœa before and after the menses with pains in the abdomen. These symptoms are covered by both *Graph.* and *Puls.* The latter medicine having already been tried, I gave the former, and from the day it was administered the fits disappeared.

Epilepsy.

Sristidhar Ghosh, aged about 38, has been subject to epileptic fits since last 3 or 4 years. He came under treatment on the 22nd November 1872. He gave the following statement of his case: Formerly the fits used to come on almost every day, but gradually the fits became less frequent, occurring once or at most twice a month. It was at this stage of the disease when the violence of the fits had subsided that he came to consult me. He stated that the fits at present came on almost every month without a distinct aura, and accompanied by sudden screaming and turning of the face and neck towards the right. Gradually his eyes become convulsed and blood shot, and turn upwards, with change of color in the face which becomes bluish. He moans like a person in anguish, or as if suffering from a certain intense pain, has rigidity of the upper and lower extremities without actual convulsions. He continues in this state of insensibility for about half an hour or less, after which his senses return gradually. When fully restored to his senses he complains of a burning sensation all over the body and headache which lasts for a whole day. The patient was naturally of a stout make and plethoric disposition, which latter he retained in spite of the frequent recurrence of the fits during the period of his illness. The disease was first brought on by hurry and worry, and some anxiety consequent upon his profession as a compounder. He was, before he came to me, drugged with all sorts of tonics and antispasmodics, particularly *Zinci oxyd.* He left off all this treatment in disgust and utter hopelessness.

I commenced the treatment with *Bell.* 6 which he took for a fortnight, at the end of which he got fever. Thinking the fever was the effect of the low dilution I had used, I gave him *Bell.* 30. The fever however came on with greater violence, and as it came on in the

evening I gave *Puls.* 6. On the following day he had *Nux v.* for the confined state of his bowels. The fever still recurring, I gave *Sulph.* which succeeded in warding it off altogether. With the fever the fits disappeared.

Remarks.

It is singular that during the whole course of the epilepsy which extended over a period of upwards of three years, the patient had not suffered from fever till the last, though the whole district of Krishnagar, and particularly the quarter in which he was living, was suffering most severely from the epidemic malarious fever, and not a single member of his own family escaping from its attacks. Was the epilepsy due to suppressed intermittent fever? Or was the epilepsy converted into fever by the medicines prescribed, which finally caused it to disappear with the fever itself?

Epilepsy.

Mathura, a day-laborer and by caste a *bagdi*, aged about 25. He came for treatment in the latter part of February 1873, and gave me the following particulars of his case: The disease first appeared while he was working in a field under the sun. Since then the fits have been coming on every week or fortnight, with a distinct aura in the shape of a tingling sensation in the right hand. Then his right arm and leg would become rigid and feel as if they were drawn downwards by an irresistible force; this was again followed by jerking and tossing of the limbs with turning of the head towards the right and a fixed stare, with injection of the eyeballs which were turned upwards. In this case the convulsions were confined invariably to the right side which felt numb. His consciousness remained unclouded up to the last stage of the fit. In fact he seemed to think that he lost it only at the time when his eyes were turned upwards. I gave him *Bell.* 6 which he continued over a month at the end of which he was quite well.

Phthisis Pulmonalis (non-tubercular).

Matilal Sen, aged 16, came under treatment on the 13th May 1873. The first symptoms of the disease broke out in the beginning of March 1873, in the shape of dry, titillating cough, preceded by

a slight attack of fever. The fever went off in a day or two, but the cough continued to trouble him, particularly during the night. His father, with whom he was living at the time, took no notice of his complaint till the patient began to complain of heaviness and pain in the chest. A native doctor, attached to the pilgrim hospital at Balasore, was asked to see him. But the patient became worse and his disease took a serious turn. He became emaciated; his fever increased; his cough was frequent and accompanied with copious, pus-like expectoration. The civil medical officer of the station was consulted, who, on examining the patient, suspected the disease to be phthisis, and advised removal to a healthier climate. Instead of doing this at once the father thought of taking him to Calcutta to have the opinion of some experienced physician. While on the way to Calcutta a remarkable change took place in the condition of the patient. The constant fever from which he was suffering disappeared; his appetite improved; and the cough, which was most harassing, became much less; and by the time he reached Calcutta he was a good deal stronger. The late Dr. Chuckerbutty saw him and prescribed cod liver oil and some cough mixture. His stay at Calcutta did not exceed 10 or 12 days during which he was somewhat better. The improvement however, was not lasting; and he was brought up to Krishnagar his native place, and placed under the treatment of an experienced practitioner. But the disease grew worse and the patient lapsed into his original condition. It was in this state he was brought to me on May 13th, 1873. Emaciation, a constant hacking cough, with copious muco-purulent expectoration, hoarseness, loss of appetite, hectic and clammy perspiration at night,—all these left no doubt in my mind as to the nature and stage of the disease. The chest-walls under the clavicles were much sunken, there was dulness on percussion, and absence of normal vesicular murmur in this region. There was tubular breathing, with loud mucous rales and wheezing. He also complained of great dyspnoea on the slightest exertion. The cough was of an asthmatic nature, used to come on in paroxysms, night and day, preventing sleep. The pulse was never below 100, and rose to 120. His temperature, as far as could be judged by the touch, was much above normal. The most remarkable feature of the case was that there was no hæmoptysis from beginning to end.

There was no hereditary predisposition. The only predisposing cause which could be traced was in the patient himself—Loss of seminal fluid from self and nocturnal pollutions.

When I first commenced treatment he was suffering much from paroxysmal attacks of cough, with loud wheezing all over the chest. I gave him *Ipecac.* and *Aco.* in alternation much to his relief for a couple of days. But they were powerless afterwards, and I gave *Bryo.* and *Nux. v.* There were continued for a week, and then I gave *Phos.* in alternation with *Bryo* for the following symptoms—Loud crepitations all over the chest, with catching pains in the sides when coughing, and purulent expectoration. These medicines doing no good I had recourse to *Lyco.* and *Ars.* But these also were of no use. I began to despair, till one thing struck me as very singular, namely, that there was no proper assimilation of food; for though the patient was taking ample nourishment he was rapidly wasting away, and his loss of appetite was so great as to amount to actual loathing. This made me think of *Calc. Carb.*, and from the day the medicine was administered improvement set in. The fever and the cough became less and less; the appetite gradually returned; and in a week's time he gained some flesh. I gave him the 6th potency, three times a day, and he had the medicine altogether for a month, at the end of which he was restored to almost perfect health.

Vicarious Menstruation complicated with Hysteria and Chlorosis.

Aged 19, a married lady, born of respectable parents, has been suffering from the above complaints for about a year or so. She was under European allopathic treatment from the beginning and finding no permanent relief therefrom she resorted to Kavinaj treatment with a similar result. It was at the last hour when her friends gave up all hopes of her recovery that she was brought to me at the instance of the brother of the husband who had some faith in homoeopathic medicine. The previous history of the case is as follows:—Being a resident of a malarious district, she suffered long and much from fever previous to her marriage, and it was not till she arrived at the age of 12 that she could get rid of it entirely. It was about this time that she had her first menses which continued to be regular and healthy for sometime, after which it became irregular and profuse and remained so till she became *enciente*. She aborted on the 3rd or 4th month of her pregnancy. Some 2 or 3 months subsequent to the abortion there was stoppage of the monthly flux. But when it reappeared it was found to be profuse and recurred too soon, almost twice a month. She continued in this state for another

couple of months, at the termination of which it became scanty and rare. It was about this time that she first complained of epistaxis during the menstrual periods. Being naturally of a spare make and weakly constitution she became still more weak and emaciated from this periodical loss of blood. She suffered very frequently from vertigo, impaired appetite, nausea and other minor complaints. It was at this stage of the disease that she was brought under systematic treatment. The doctor, neglecting to look into the real source of the disease, fell upon treating the most prominent symptom, viz., *epistaxis*. The lady became subject to hysterics, as soon as the periodical bleeding from the nose was stopped. After this she placed herself under the treatment of a native Kaviraj, who rallied her a little for a time, so that the bleeding and fits became less frequent and severe. Nevertheless she lived a miserable life, quite unfit for any household work whatever.

She was brought to me in the latter end of Bhadra 1281 (B. E.) and I collected the following symptoms; great emaciation; bleeding from the nose and inner angle of the left eye, almost every day; menses too scanty and reduced to a drop or two about the usual period; hysterical fits bordering upon catalepsy during the periods; general debility; anorexia, costiveness and vertigo.

I commenced the treatment with *Nux v.* under which she felt better for four days, at the end of which there occurred bleeding from the nose and eye as before; after this I changed the medicine and gave her *Humamelis* which was continued for a day or two. But the appetite which was reviving under *Nux* having failed I resorted to it again. Finding no relief after a week's trial of it I selected *Bryo.* and *Puls.* in alternation for a week more but to no purpose. The bleeding and great aversion for food remained as before. Then I fell back upon *Nux* again in alternation with *China* but this disappointed me equally if not more, as in addition to her anorexia, nose-bleed, &c., she began to complain of an unusual accumulation of saliva in the mouth, which made her constantly to spit in monthfuls, although she had no nausea along with it. This I took to be an hysterical symptom and gave her many intercurrent remedies such as *Ignat.*, *Ipecac.*, *Bell.*, &c., but they one and all failed to influence the morbid symptom any way. This puzzled me very much and I began to think that it might have some other source for its origin and that I may have been wrong in my diagnosis. Just at this crisis, I was one day asked to examine the abdomen of my patient, when I felt at the left iliac region the upper border of a flattened body which

seemed quite ragged and hard but not painful, just as is met with in splenic or hepatic enlargements of some children. Higher up in the left hypochondrium I felt the spleen which was stony hard and similarly ragged. On enquiry the patient said that she had the splenic enlargement for a long time but the other hard body she perceived within a short time, probably not long before the salivary glands began to secrete so profusely. I thought that the excessive secretion of saliva may be due to this abnormal growth in the ovaries or of something in connection with it. Besides, the patient looked so very pale and weak that I attributed all her present symptoms to poverty of blood. In fact, she looked the very picture of *chlorosis*. Considering all this I made up my mind to giving her Iron as the best medicinal food to be thought of under the circumstances. I gave her *Ferrum redactum* in material doses, viz., 3 grains once at meal time. Her appetite improved within a very short time after its administration. Along with this I gave her *Bryo.*, *China*, *Puls.* and *Sulph.* in alternation according to their indications. Under this she gradually got rid of the vicarious bleeding and was perfectly restored to her former health. I am told that after a month's trial of the medicine her menses became regular. She soon became pregnant and brought forth a healthy child in due time.

Hæmorrhagic Dysentery.

Nibaran Chunder Banerjee, aged 13, living in a narrow dingy lane close to my house, caught fever on the night of the 9th August last and was very ill and almost sinking on the following noon, when I was called to see him. He had passed several diarrhoeaic stools in the morning, which were soon followed by bloody ones. After 4 such stools the patient's features became bluish, his eyes sunken, with inability to speak. Alarmed at this his parents gave him a native medicine, the chief ingredient of which was cobra-poison. Finding no improvement in half an hour, which they had expected, they sent for me. I observed the following symptoms:—Face cadaveric; involuntary, bloody, stinking stools; speech indistinct; jactitation of the limbs; body warm, but extremities cold; constant moaning with hurried breathing; pulse barely perceptible. I watched him for a few minutes, and there was no doubt in my mind that he was dying. If I gave any medicine at all, it was more for the sake of the parents, than with the most distant hope of doing good to the patient. The

medicine I gave was *Ars.* 12 which was continued every half an hour till 5 p. m. By that time symptoms of reaction had set in. The bloody stools had stopped, and the patient had become quieter. Thus encouraged I ordered the medicine to be given at longer intervals. By 12 midnight the patient sat up in bed and asked for food. In the morning he walked to my place supported by his uncle. Finding him somewhat feverish I gave him *Aco.* which he took during the day with relief of the remaining symptoms.

Remarks.

Marvellous, and at times almost incredible, as the action of homœopathic infinitesimals is, the action of Arsenic in this case has been the most marvellous in the whole course of my experience.

• Gleanings from Contemporary Literature.

THE EXTRA-HAHNEMANNIAN SOURCES OF THE HOMŒOPATHIC MATERIA MEDICA.

Jörg—Hartlaub and Trinks—Stapp—the Austrian Provings—Hering—Hale—Allen.

A Lecture delivered at the London Homœopathic Hospital, on Thursday, January 25th, 1877,

By Dr. RICHARD HUGHES.

[THIS lecture was the third and last of a series on "The Sources of the Homœopathic Materia Medica." Much of the matter contained in the first and second has already appeared in the pages of this Journal (see vol. xxxii, p. 631; vol. xxxiii, p. 103; vol. xxxv, p. 71); and it is not thought well to reproduce it here. The following summary of the two lectures taken from the report of them in the *Monthly Homœopathic Review* will suffice to introduce the present one.

"I. The first lecture was devoted to HAHNEMANN'S *Fragmenta de viribus medicamentorum positivis* and *Materia Medica Pura*.

The earlier of these two publications appeared in a single volume in 1805; it contained pathogenesies of twenty-seven drugs, each consisting of symptoms obtained by proving on the author himself and others, with observations of poisoning and over-dosing cited from authors. The provings were mostly made with single full doses of the several drugs.

The *Reine Arzneimittellehre* or *Materia Medica Pura* began to appear in 1811. Its first edition was completed by the publication of a sixth volume in 1821; by which time the pathogenesies of 61 medicines had been presented, 22 of which had already appeared in the *Fragmenta*. From the second volume onwards Hahnemann was assisted in proving by a band of disciples who had gathered round him, whose contributions henceforth form a large part of his symptom-lists. A second and augmented edition of these six volumes appeared in the years between 1822 and 1827; and a third was commenced in 1830, which, however, terminated with the second volume in 1833.

The lecturer gave a full account of the contents and character of the *Materia Medica Pura* in its several editions, illustrating his statements by the volumes themselves, and by tables prepared to show the medicines they contained, and the number of symptoms obtained from each. He adduced evidence to show the great care and circumspection exercised in the provings, which were ordinarily made, he said, with the first triturations of insoluble substances, and the mother tincture of the vegetable drugs, repeated small doses being taken until some effect was produced. He was unable to speak so favourably of the citations from authors, when

taken from observations made upon sick persons. He showed by a number of instances in which he had followed up the references, that the principles on which Hahnemann selected the true medicinal symptoms from among those of the disease are not such as we can approve at this day. All citations of this character must therefore be taken provisionally only, until verified from purer sources. He mentioned that in Dr. Allen's *Encyclopædia* the student is, for the first time, enabled to distinguish symptoms so obtained from those which surround them, and to learn all that can be known of the circumstances under which the observations were made.

Dr. Hughes concluded by a high eulogy of the wisdom and industry displayed by Hahnemann in his first contribution made on any large scale to the knowledge of the physiological actions of drugs.

II. In the second lecture Hahnemann's *Chronic Diseases* was discussed. The first edition of this work, published 1828-30, consisted mainly of pathogenesies of a series of new medicines, 17 in number, introduced to combat the mischief wrought (according to his theory of chronic disease now promulgated) by the "psoric" miasm. These pathogenesies appear without a word of explanation as to how they were obtained, and no fellow-observers are mentioned. Coupling this with the advanced age of Hahnemann and his isolated position at the time, and many hints afforded in his prefaces to the several medicines, he came to the conclusion that the symptoms were not obtained by provings on the healthy, but were the (supposed) effects of over-doses (that is, of attenuations so low as from the third to the twelfth) taken by the chronic sufferers who resorted to him for relief.

The second edition of the *Chronic Diseases* was published in 1838-9. Besides the 22 medicines of the first edition it contained 25 others, of which 13 were new, and 12 had already appeared in the *Materia Medica Pura*. The new material of this edition was taken from several sources, such as the provings of Jörg, Hartlaub and Trinks, and Stapf, of which an account would be given hereafter. A large part of it, however, consisted of contributions from fellow-observers, which may fairly be presumed to have come from provings on the healthy, but all (as contemporary evidence showed) instituted with globules of the 30th dilution.

The lecturer then discussed the value of provings with infinitesimal doses, observing that their power to affect the healthy body was another question from that of their efficacy in disease. From a survey of the evidence on the point, he concluded that we had no right to reject symptoms so obtained; that at the utmost they needed clinical verification. The pathogenesies of the *Chronic Diseases* should not, he said, on this account be discredited. On the other hand, the new symptoms of the first edition had the additional feature of having been observed on the sick instead of on the healthy; and this, after the evidence presented in the first lecture of Hahnemann's unsatisfactory mode of choosing symptoms so obtained, he admitted to be a grave impeachment of their validity. They needed, he said, pathogenetic verification—their reproduction in the

healthy, ere they could be admitted as genuine drug-effects into the *Materia Medica*.

Dr. Hughes concluded with an account of the translations of Hahnemann's pathogenesies suitable for the student, which was a recapitulation of his statements on the subject contained in the current number of the *British Journal of Homœopathy*.]

In my two previous lectures on the Sources of the Homœopathic *Materia Medica* I have given a full account of our chief mines of knowledge on this subject—the *Fragmenta de viribus*, *Reine Arzneimittellehre* and *Chronischen Krankheiten* of Hahnemann. On the present occasion I have to speak somewhat more briefly of the other and later contributions to the pathogenesis of drugs which go to make up our wealth.

1. The first to appear in the field of drug-proving after Hahnemann had led the way was no follower of his, but a professor of the University of Leipsic, Dr. Johan Christian Gottfried Jörg. His academical position gave him pupils to assist him; and twenty-one of these, with himself, his two young sons, and three females (aged forty-five, eighteen, and twelve respectively), formed his company of provers. He published at Leipsic in 1825 a first volume of the results obtained, under the title of *Materialien zu einer künftigen Heilmittellehre durch Versuche des Arzneyen an gesunden Menschen*. It contained experiments with the following drugs:

Acidum hydrocyanicum (with aqua laurocerasi and aqua amygdalarum amararum).

Arnica (flowers and root).

Asafœtida.

Camphor.

Castoreum.

Digitalis.

Ignatia.

Iodium.

Moschus.

Nitrum.

Opium.

Serpentaria.

Valerian.

All these substances were taken in moderate doses, repeated (and if necessary increased) until a decided impression was made. The experiments of each prover are related in full, just as they were made and as the symptoms occurred. In the preface a description is given of the age, temperament, and constitution of those engaged in the task, and the assurance afforded that all were in good health.

You will see at once that in the mode of giving these provings to the world, Professor Jörg has greatly improved upon Hahnemann. While the latter leaves us in darkness as to the subjects of the provings, the doses taken, and the order and connection in which the symptoms appeared, here all is clear daylight. Of the intrinsic value of the provings the best evidence is that Hahnemann was glad to incorporate them in his own pathogenesies. He seems to have been ignorant of them up to 1833; for in the second volume of the third edition of his *Reine Arzneimittellehre*, then published, he credits Jörg's symptoms of *Ignatia* to Hartlaub and Trinks, who had simply copied them into the collection of theirs of which I shall speak next. But in the second edition of the *Chronischen Krank-*

heiten (1835-9) he uses Jürg's pathogenesies of *Digitalis*, *Iodium*, and *Nitrum*, referring them to him by name and work.

You have only, I think, to examine these provings to come to the same opinion of their value. You may see the original work in the library of the College of Surgeons; or may read its experiments in the fourth volume of Frank's *Magazin*, from which, moreover, many of them have been translated by Dr. Hempel in his *Materia Medica*. It is a pity that a volume so rich in instruction and usefulness has not long ago been rendered into English as it stands; and I commend the work to any competent person who desires to do service to his fellow-homœopaths of the English speech.

2. The next to take up the work of instituting and publishing drug-provings were two distinguished members of the homœopathic school—Drs. Hartlaub and Trinks. They also named their collection *Reine Arzneimittellehre*, evidently intending it to be a sequel to Hahnemann's work. It was published at Leipsic in three volumes, dated 1828, 1829, and 1831 respectively. Each contains an elaborate pathogenesis of certain new medicines, and shorter contributions to the knowledge of others already familiar to homœopaths. The former like Hahnemann's, are made up of original provings instituted by them and of citations from authors; the latter are chiefly single provings or cases of poisoning. All are arranged in the usual schematic order; and there is a great, though not entire, lack of information as to the circumstances of the experiments.

The first volume contains full pathogenesies of *Plumbum*, *Cantharis*, *Laurocerasus*, *Phosphorus*, and *Antimonium crudum*, and shorter additions to the symptomatology of eighteen other drugs.

The second volume gives us, in the first category, *Gratiola*, *Oleum animale*, *Alumina*, *Phellodrium*, and fourteen medicines in the second.

The third volume introduces to us *Borista*, *Kali hydriodicum*, *Itatankia*, *Strontian*, and *Tabacum*, and adds to our knowledge of no less than thirty other substances.

As these volumes came into existence between 1828 and 1831, it was obviously open to Hahnemann to avail himself of them for the third edition of his *Reine Arzneimittellehre*, (1830-3), and the second of his *Chronischen Krankheiten* (1835-9). This he has done to the fullest possible extent. He has not only used their new provings, but has transferred to his pages the symptoms they have extracted from authors, and in doing so has frequently omitted the references to the work and page, leaving those curious in the matter to refer to Hartlaub and Trinks. I was much hindered in my work of examining the originals of some of his citations until I discovered this practice of his.

I come now to an important and much-questioned feature of Hartlaub and Trinks' pathogenesies—I mean the provings furnished by the person designated as "Ng." On the first occasion of Hahnemann's using their work in his *Chronischen Krankheiten*, viz., in the section of *Alumina*, he makes in his preface the following remarks:—"With merely these two

letters (anonymously indeed !) Drs. Hartlaub and Trinks designate a man who has furnished the greatest number of symptoms for their *Annals*, but these often expressed in a careless, diffuse, and indefinite manner." He goes on to say that he has extracted that which was useful from his contributions, believing that he was a truthful and careful person ; but that it was not to be expected that in so delicate and difficult a matter as drug-proving, the homœopathic public would place confidence in an unknown person designated simply as "Ng." This note of Hahnemann's has led to a good deal of mistrust of the symptoms of the anonymous observer in question, which has been increased by their excessive number,—Dr. Roth having counted more than eleven thousand in the several contributions to the *Materia Medica* furnished by him between 1828 and 1836. So far has confidence been lacking, that the compilers of the *Cypher Repertory* have felt themselves warranted in omitting "Ng's." symptoms from the materials they have indexed. But there are important considerations on the other side. Dr. Hering has satisfactorily explained the anonymity. "Ng," he writes,* "was a surgeon near Budweis in Bohemia, a candid, upright, well-meaning man, not very learned : his name was Nenning, and everybody knew it. According to the laws of his country he had no right to practise except as a surgeon. A lameness of the right arm disabled him from following his calling. His wife commenced a school and instructed girls in millinery ; she supported the family by this. Nenning became acquainted with homœopathy, and soon was an ardent admirer. He had the grand idea to aid the cause by making provings on the girls in his wife's millinery shop. He succeeded in persuading them. Unluckily enough he came in connection with Hartlaub in Leipzig, instead of with Hahnemann himself. All Austrians were forbidden by a strict law to send anything outside of Austria to be printed : hence not only Nenning, but all other Austrians, appeared in our literature with only initials." Nenning himself has given, in the *Allgemeine Hom. Zeitung* for 1839 a similar account, to explain the number of his symptoms. "If I have perchance," so he writes, "made too many provings, for it is remarked that I have furnished too many symptoms, that should, in my opinion, deserve sympathy rather than ridicule. The exhortation of Hahnemann not only to enjoy but to put our hand to the work animated my zeal, and the active support of Hartlaub rendered it possible for me to do that which perhaps strikes Hahnemann as surprising. A number of persons, partly related to me, and partly friendly, were gathered together by me, and, in consideration of board and payment, made experiments. Along with them were also my two daughters, and with complete reliance on the honesty of them all, I gave one medicine to one and another to another, writing down all that they reported. It was a matter of conscience on my part also not to omit the smallest particular ; and that thereby frequent repetitions have arisen I grant readily, but I thought that just in that way the sphere of action of the medicine could be best recognised."

It seems, then, that Nanning's symptoms were obtained in the true way, viz. by provings on the healthy body; but that the payment of the provers and the want of discrimination exercised in receiving their reports throw some share of doubt upon the results. I cannot think, however, that they warrant their entire rejection. The only thing which such symptoms need is "clinical verification," testing, that is, by being used as materials wherewith to work the rule *similia similibus curantur*. If, when submitted to this test, they (as a rule) prove trustworthy, we may safely assume them to be genuine, and admissible into the *Materia Medica*. Now, we have the testimony of three of the most industrious symptomatologists of our school—Bünninghausen, Hering, and Wilson—that they have found no reason to distrust Nanning's symptoms, and use them as satisfactorily as those of other observers. No statement to the reverse of this has come from the other side; so that we may accept Nanning's contributions as at least provisionally established to be good and sound additions to our pathogenetic material.

3. The next name on our list is that of Dr. Ernst Stapf. This physician, one of Hahnemann's oldest and most valued disciples, began in 1822 to publish a journal devoted to the interests of the new method. He called it *Archiv für die homöopathische Heilkunst*; but it is generally known simply as the *Archiv* or—very often—Stapf's *Archiv*. To this journal the contributions most urgently called for and most largely furnished were provings of medicines. By the time that fifteen volumes had been published a considerable number of these had accumulated; and it became desirable to give them a separate form for practical use. Some of them—notably those of *Anacardium*, *Cuprum*, *Mezereum*, and *Platina*—Hahnemann (who had himself taken part in many of the experiments) designed to use for the second edition of his *Chronic Diseases*; and these Stapf left alone. But the rest—in all containing twelve medicines—he published in 1836 in a volume entitled *Beiträge zur reinen Arzneimittellehre, i. e.* Additions to the *Materia Medica Pura*. The medicines are—

<i>Agnus castus.</i>	<i>Ranunculus</i>	<i>Sabina.</i>
<i>Glematis.</i>	(bulbosus and sceleratus).	<i>Senega.</i>
<i>Coffea.</i>	<i>Rhododendron.</i>	<i>Teucrium.</i>
<i>Crocus.</i>	<i>Sabadilla.</i>	<i>Valerian.</i>

All those as to which any information is given on the point were proved in Hahnemann's earlier manner, *i. e.* in moderate but substantial doses, generally taken singly. The results are presented in the usual schema form, but with copious reference to the separate experiments of the provers, when these are specified. The introductions to the several medicines are full and interesting, and contain much information about their former uses and about such homœopathic experience as had been gained with them. The whole makes a very valuable volume, and, as it has been rendered into English by Dr. Hempel, it is available for all students.

4. I have next to speak of the Austrian provings. By the year 1842 homœopathy had come to number many able and active representatives in

Vienna ; and it seemed to them (in the words of one of their number) "a shame to be stretching their indolent limbs and lolling lazily upon the couch prepared for them by the laborious toil of the master ;" they determined to have "courage to tread bravely in his footsteps, and to pursue, with untiring patience, the path he had opened up to them." They considered the most serious obstacle to the practice and advance of the homœopathic method to be the form in which Hahnemann had given his provings to the world, *i. e.* as a schema of detached symptoms, without information as to how, or in what order and sequence, they were obtained. They set therefore before themselves, as their main task, the reprovings of medicines, without excluding occasional original experiments.

In pursuance of the object they gave us reprovings of *Aconite*, *Bryonia*, *Colocynth*, *Natrum muriaticum*, *Sulphur*, and *Thuja* ; and primary provings of *Argentum nitricum*, *Coccus cacti*, and *Kali bichromicum*. Each drug was entrusted to one member of the society into which they formed themselves, who undertook and superintended the experiments, and published them in full detail, with an elaborate account of all that was known of the medicines up to the time of writing. From twenty to thirty persons took part in every proving ; and, though trials of the attenuations were not neglected, the great aim of the experimenters seems to have been the development of the full physiological action of drugs from repeated and increasing doses of the mother-tincture, which (in the case of *Thuja*) even reached as much as 1000 drops at a time.

The monographs containing these most valuable provings were chiefly published in the *Österreichische Zeitschrift für Homöopathie*, a journal conducted by the Austrian Society, which runs through four years. Wurm's reprovings of *Sulphur* is contained in a later periodical, the *Zeitschrift des Vereins der homöopathischen Aerzte Österreichs* (vols. i and ii). Most of them have been translated into English* with more or less completeness. They will always be ranked among the chief materials we possess for the construction of the *Materia Medica* of the future ; and the labourers at them, of whom we may mention as pre-eminent Watzke, Huber, Mayerhofer, Wachtel, Wurm, Arneth, Gerstel, and von Zlatarovich, have written their names indelibly on the roll of the heroes of the homœopathic history.

While thus giving prerogative rank to the Austrian provings, it must be added that they are but one instance of the activity of German homœopathy in this field down almost to the present day. Not only Stapf's *Archiv*, but the other journals published in that country, as Hartlaub and Trink's *Annalen*, Griesselich's *Hygea*, and, later, the *Allgemeine homöopathische Zeitung* and *Vierteljahrsschrift*, teem with provings and reprovings. Among the former may be mentioned those of *Berberis*, *Coca*, *Colchicum*, *Hypericum*, *Kreasote*, and *Nux moschata* ; among the

* *Colocynth*, *Coccus cacti*, and *Thuja*, in Metcalf's *Homœopathic Provings*, *Sulphur* in the *British Journal of Homœopathy* (vols. xv and xvi), and *Argentum nitricum* as an appendix to Hempel's Translation of Stapf's *Beiträge*.

latter those of *Agaricus*, *Chamomilla*, *Cyclamen*, *Chelidonium*, and *Euphrasia*. The men whose names stand out most prominently as conductors of these experiments are Buchmann, Buchner, Helbig, Hencke, Hoppe, Koch, Lembke, and Reil. The last great contribution to the *Materia Medica* we have received from this source has been Buchmann's *Chelidonium*; but an endeavour to have a thorough reproof of *Cuprum* has recently been set on foot by the Central Verein, and we hope it may bear good fruit.

Nor has the old school of medicine in Germany been altogether insensible to the exhortations and example of Jörg. Professor Martin, of the University of Jena, has occasionally proved medicines on his students, and published the results obtained; to this source we owe the pathogenicity of *Kali chloricum*. In 1848 the Vienna Society of Physicians set itself—in emulation of its homœopathic “double”—to make provings. The medicines selected were *Arnica*, *Belladonna*, *Chamomilla*, *Chelidonium*; and each was tested by from five to twelve persons, taking the drugs after the manner of Jörg. Unfortunately, “the committee” (I quote from Dr. Dudgeon's account) “who had the drawing-up of the report of the results of the trial cut down the symptoms of each prover in a most arbitrary manner, and only recorded such symptoms as were common to all or most of the experiments.” One of these, however—Schneller by name—has given a detailed account of his provings of the above-named drugs, and also of some additional experiments instituted on himself with *Aconite*, *Conium*, *Hyoscyamus*, *Rheum*, and *Stramonium*. You will find his communication translated in the sixth volume of the *British Journal of Homœopathy*. Besides these, the followers of Rudemacher have made a few provings; their experiments with *Ferrum* have been translated in the ninth volume of the same journal. More recently Professor Schroff, though giving his attention mainly to experiments with drugs on animals, has not been unmindful of the value of occasionally instituting them on the human subject, and has given us (especially from *Aconite*) some valuable provings.

Before passing to the other chief scene of homœopathic provings—the United States of America—let me say a few words as to what has been done of the kind in the rest of the countries into which the method of Hahnemann has penetrated.

The only original pathogenesis of note which France has given us is that of *Quinine* by Dr. Alphonse Noack; and the two great compilers of *Materia Medica* in that country have been Drs. Roth and Jahr. All these three names point plainly to the German extraction of their bearers. Some indigenous proving, however, has been done by Pétroz, Teste, Molin, and Imbert-Gourbeyre; and published in the French homœopathic journals.

England has contributed little more to our pathogenetic treasury. The *Kali bichromicum* of Drysdale, the *Naja* of Russell, the *Cedron* of Casanova, the *Cotyledon umbilicus* of Cruig, and the *Uranium nitricum* of Edward Blake—these are all the provings of any note of which we can boast during the forty years in which homœopathy has been practised in this country.

Still less can be said of *Spain* and *Italy*, which have only given us (so far as I know) one medicine each—the *Tarantula* of Nuñez from the former and the *Cactus* of Rubini from the latter. From *Brasil* we have received a collection of provings of the plants and animal venoms indigenous to that country instituted by Dr. Mure, of Rio. They are of obscure origin and doubtful value; and hardly one of the substances tested has come into general use. Still more dubious are the *Nouvelles Donnees* of Dr. Houat, of the French island of *Réunion*. If you will read the review of his first volume in the twenty-seventh volume of the *British Journal of Homœopathy*, and will then verify the suspicions expressed by looking through a few of his pathogenesies as given by Dr. Allen in his *Encyclopædia*, you will not wonder that the latter places them in an appendix by themselves, as unworthy to rank with the *bond fide* experiments derived from other quarters.

5. I come now to the American sources of the Homœopathic Materia Medica; and the first and most illustrious name on the record is that of Dr. Constantine Hering. I should suppose that the number of medicines in whose proving this physician has taken a more or less principal part is hardly less than that which we owe to Hahnemann; and though the latter, being first in the field, has given us most of our greatest remedies, yet we cannot forget our debt to Hering for *Lachesis*, for *Apis*, and for *Glonoin*.

I believe that a good many of Dr. Hering's provings remain in manuscript to this day; and I hope that, in spite of his already venerable age, he may live to publish them. Those which have already seen the light are contained in the *Transactions of the American Institute* or the *American Homœopathic Review*, or they appear in one or other of his two separate publications—the *Amerikanische Arzneiprüfungen* and the first (and as yet only) volume of his *Materia Medica*. The former is written, as its name imports, in the German tongue, Dr. Hering having originally come from that country. He began to issue it, in parts, in 1852; and, when discontinued, it had come to contain monographs on twelve medicines—most of them new to homœopathy—embracing clinical observations as well as pathogenetic effects. Among the drugs included I may mention *Benzoic acid*, *Aloe*, *Apis*, *Allium cepa*, *Glonoin*, and *Millefolium*. The greater number of these have been translated in one or other of our journals. In 1869 Dr. Hering set on foot the *American Journal of Homœopathic Materia Medica*, with the design of appending thereto another series of monographs on medicines. He ceased to do so when sixteen of these had been completed, and then published them separately as the volume of *Materia Medica* which I have mentioned. Besides elaborate arrangements of several of our old remedies—as *Cuprum*, *Spongia*, and *Stramonium*—it gives us the *Biodide of Mercury*, *Natrum sulphuricum*, and *Osmium*.

I have omitted to mention Dr. Hering's first publication, which dates as far back as 1837. It is his *Wirkungen des Schlangengiftes*—a full collection of the observed phenomena of snake-bites, together with provings on the healthy subject mainly instituted with *Lachesis*, which great remedy he thus introduced to medicine.

But, while all would give the precedence to this honoured name among the American contributors to our *Materia Medica*, it is far from standing alone. In the earlier period those of Neidhard, Jeanes, Williamson, and Joslin may be named in association with it: in later times those of Dunham, Allen, and Conrad Wesselhoeft—not to mention Dr. E. M. Hale, of whose work I must speak separately. The chief instigation and collection of the provings of the United States has proceeded from the American Institute of Homœopathy. This association, at its first meeting (under Dr. Hering's presidency) in 1866, appointed a "bureau" (or committee, as we should call it) for the augmentation and improvement of the *Materia Medica*. The first fruit of its labours was the volume entitled *Materia Medica of American Provings*, whose third edition I now lay before you. It contains the original provings of the *Benzoic*, *Fluoric*, and *Oxalic acids*, of *Kalmia*, *Podophyllum*, *Eupatorium*, *Sanguinaria*, and several other important drugs. From that time to this, the *Transactions* of the Annual Assembly of the Institute have rarely failed to contain fresh provings furnished by its Bureau of *Materia Medica*, down to those of *Physostigma* and *Sepia* which constitute its chief labours for 1874 and 1875 respectively. Provings have also formed a prominent feature in many of the American journals. Excellent material for them is now afforded by the students, of both sexes who flock to the homœopathic colleges of the States; and the teachers of *Materia Medica* therein have not been slack in availing themselves of their opportunities.

6. A new fountain of *Materia Medica* was opened in 1866 by Dr. E. M. Hale, of Chicago. For some years previously his attention had been drawn to the mine of remedial wealth which existed in the indigenous plants of his country. A few only had been proved and employed in the homœopathic school, but all around him he found them in constant use by the common people, and by the "botanic" and "eclectic" practitioners—cures often resulting from them where both allopathy and homœopathy had failed. He determined to collect into one volume all pertinent information regarding the principal medicines thus obtained, to reproduce old and institute new provings, and to present all trustworthy recommendations and experiences as to their use. The result was the volume entitled *New remedies in Homœopathic Practice*. It obtained great success, so that in two years a second edition was demanded. This appeared in 1867, following the same order as the first, but incorporating all fresh facts that had come to light, and adding thirty-five more medicines to the forty-five previously published. In 1873 a third edition was issued, in which (very unwisely, as I think) the materials previously collected were boiled down to a list of (so-called) "characteristic" symptoms. But in the fourth and latest form which the work has assumed this error has been retrieved. The first volume, indeed—entitled *Special Symptomatology*—is of the same character as the third edition. But in the second volume, or *Special Therapeutics*, history, account of provings, testimonies of authors, and narratives of cases have been restored. We only want the detailed provings of the second edition to make the work complete.

I do not hesitate to say that by these publications Dr. Hale has rendered an inestimable service to homœopathy, and thereby to the art of medicine. There has been plenty of severe criticism on his indiscriminate collection of material, his too fond estimates of his new treasures, and the assumptions in which he has sometimes indulged. But these are small matters compared with the actual enrichment of our remedial treasury which has been effected by his means. We really owe to him *Actæa*, *Æsculus*, *Apocynum*, *Baptisia*, *Caulophyllum*, *Chimaphila*, *Collinsonia*, *Dioscorea*, *Eupatorium purpureum*, *Gelsemium* (as Dr. Allen will have us call it), *Hamamelis*, *Helonias*, *Hydrastis*, *Iris*, *Phytolacca*, *Sanguinaria*, *Senecio*, and *Veratrum viride*. It is no abatement of this obligation to say that some of these had been known previously, and that none have been actually proved by Dr. Hale himself. It was his book that made them current coin, wherever they had been minted before; and it was he who incited the new provings, though he acted only as their promulgator and expositor. The school of Hahnemann in every country owes him hearty thanks for all this; and allopathy is beginning to share our gain.

I would advise students, until they can obtain the fifth edition (which I have reason to believe will meet every requirement), to endeavour to procure a copy of the second, supplementing it, if possible, by perusal of the second volume of the fourth.

7. I have now mentioned all the primary sources of the special *Materia Medica* of Homœopathy. In so doing I have had to bring before you more than a score of separate volumes, besides referring to whole series of Journals and Transactions. You will naturally ask whether no attempt has been made to bring these multitudinous and scattered provings into one collection, so that they may be accessible to the student and available for use by the practitioner. This brings me to the last name in my list to-day, that of Dr. Allen of New York.

Our only *codices* of symptomatology hitherto had been those of Jahr and of Noack and Triaka. Both date from thirty years ago; and were at the best abridgements. They were of great use in their time, but have long been superannuated. In 1874, however, a work was commenced which it will take many decades to make obsolete, and which gives us our whole pathogenetic treasury in full. I speak of the *Encyclopædia of Pure Materia Medica*, of which the first four volumes, containing the medicines from *Abies* to *Hydrocotyle*, lie now before you. Here, under the head of each drug, are collected all the symptoms obtained from it by every prover who has tested it, from Hahnemann down to the latest student of the American colleges. All are copied, translated, and arranged afresh; and every available information is given regarding the circumstances under which they occurred. Nor is this all. Dr. Allen has made a new collection of symptoms observed from poisoning and overdosing, as recorded in medical literature since Hahnemann's day; and has thereby greatly enriched many of our old pathogenesies, and originated no small number of fresh ones. The work has been improving as it has gone on; and when

the seven or eight volumes to which it must extend have been completed, it will be a treasury upon which the homœopathic practitioner will thankfully draw for many years to come.

I earnestly recommend all students of homœopathy to possess themselves of Dr. Allen's *Encyclopædia* ; but I do not advise them to content themselves therewith. No collections of symptoms, however thoughtfully made, can convey the same instruction to the mind as the original records of provings. Procure, then (I would say), or seek access to as many as possible of the primary sources of our knowledge which I have characterized, and to which Dr. Allen's book will refer you in the case of each drug. Read the day-books of the provers, and (where we have them) such narratives of poisoning as are collected in Frank's *Magazin*, in Dr. Hempel's *Materia Medica*, and in the "Pathogenetic Record" which the industry of Dr. Berridge is now giving us as an appendix to the *British Journal of Homœopathy*. You will thus obtain that enlightened general knowledge of the action of medicines which, and which alone, will enable you to use the *Symptomen-Codex* aright.—*The British Journal of Homœopathy*, April 1877.

A COMPARISON OF HEPAR SULPHURIS AND SILICEA IN OPHTHALMIC AFFECTIONS.

BY E. B. SQUIER, M.D., OF SYRACUSE, N. Y.

I think I may say with truth that in ophthalmic diseases these drugs are in the homœopathic practice more frequently prescribed than any other two drugs in the *Materia Medica* ; and I think we can account for their frequent use upon this ground :

The majority of ophthalmic affections which we meet with are those of the external parts of the eye, and these are the parts most readily affected by malnutrition and improper hygienic surroundings. For it is not from families where the children are well nourished, warmly clothed, and enjoy the benefits of pure air and sunshine, but from basements and tenement-houses, where the rooms are damp, smoky, poorly lighted and still more poorly ventilated, that the oculist gets the greater portion of his patients, and it is to this class of patients, and the ocular diseases to which they are most subject, that *Hepar sulphuris* and *Silicea* are so often of marked benefit.

In all drug provings the eye symptoms are very meagre and unsatisfactory ; especially is this true of those remedies which produce changes of tissue, probably because the provings were not carried far enough to develop the entire pathogenetic effects of the drugs. Therefore we have in the main to rely upon clinical verification of drugs when they were first applied to special cases upon general indications and found to be curative in that action.

Drs. Allen and Norton, of New York, have lately published a *Manual of Ophthalmic Therapeutics* which contains probably all of the verified indications of drugs that are used in ophthalmic practice. The experience of these gentlemen has been large, both in private and hospital practice, and their work is thus rendered the more valuable. To their work I am much indebted in the production of this brief paper. In the provings of Hepar sulphuris we find the following symptoms :

Redness and swelling of the upper lids with pain, papular eruptions under the eyes with redness of the whites of the eyes, lachrymation, photophobia, pressive pain in the eyeballs as if beaten on pressure, aversion to the open air and better from warmth, optical illusions of either dark colors or red.

Silicea : Redness of whites of the eyes with pressive pain, lachrymation, agglutination of the lids, worse at night, complaints predominate upon the upper lid.

Clinically Hepar sulphuris has been found curative in blepharitis, where the lids are thickened, the margins red and corroded, painful to touch, aggravated by cold and relieved by warmth, as are all the ulcerations in which Hepar is curative.

Small tumors and abscesses of the lids have been cured by this remedy. In scrofulous ophthalmia, where there is a tendency to ulceration of the cornea, and in deep sloughing corneal ulcers complicated with hypopion it is useful.

In promoting absorption in interstitial keratitis after other remedies have been used to subdue the disease, and in hypopion from whatever cause, it is of marked benefit. All of the above indications I have verified in practice.

Dr. Norton says that in pustular conjunctivitis uncomplicated with corneal lesions, this drug is seldom indicated, but that in acute phlegmonous inflammation of the lids, where there is a tendency to suppuration, it is most commonly indicated, and will be characterized by a throbbing, aching pain and sensitiveness, with relief from warmth and aggravation from cold.

In some forms of trachoma where there is a tendency to ulceration, especially in mercurialized patients.

In many cases of opacity of the cornea, it is said to have been useful. (In my practice I have had more marked benefit from Kali bi. and Graphites in this condition.) When marked by general indications, it has been of utility in kerato-iritis.

Dr. Norton gives a case reported by Bojanus of complete amaurosis, with pupils dilated and insensible to light, resulting from enormous doses of mercury, in which the sight was restored under the use of Hepar sulphuris.

Dr. Hughes speaks of it as being useful in blepharophthalmos where the meibomian glands are much involved, but says its most valuable property is its influence upon the cornea.

Dr. Peters, in a *Treatise upon Diseases of the Eye*, has recorded many instances of its value, especially in onyx, hypopion and prolapsus iridis, and also speaks of its utility in recurrent corneal ulceration.

Silicea, as well as Hepar sulphuris, is indicated in strumous subjects, and has many symptoms in common with it, as the aggravation from cold and at night and the relief from warmth. But it has not, I think, such marked photophobia. Its use has proven it to be a very valuable remedy in ophthalmic affections, it being more applicable to lesions of the cornea and lachrymal apparatus. It has also been reported useful in some cases of choroiditis, and in iritis when accompanied by the general indications for its use.

I have found it very useful in superficial ulceration of nearly the whole cornea, accompanied by a pressive pain in the eye, redness and relief from warmth.

Norton and Allen say that it is especially indicated in sloughing ulcers of the cornea, either with or without hypopion, in small ulcers with a tendency to perforate, and in central non-vascular ulcers. In dacryocystitis it is first to be thought of.

Drs. Dudgeon and Hughes both report cases cured with it which are of marked interest. In dacryo-cysto-blennorrhœa and in acute lachrymal fistulæ it has shown good results. A case of amblyopia from suppressed foot-sweat has been reported cured by it, and also many cases of cataract.

Hughes says that the violent suppression of a habitual foot-sweat will cause an opacity of the lens, and that Silicea controls the entire series of occurrences by restoring the warmth and moisture to the feet, and it is quite probable that the opacities which have been diagnosed as cataract and cured by Silicea were dependent upon suppressed perspiration.—*The Hahnemannian Monthly*, February 1877.

We have to tender our best thanks to the Editors of the following Periodicals for regularly exchanging with us :—

The Indian Medical Gazette. *
The British Journal of Homœopathy (H. Turner & Co., London).
The Monthly Homœopathic Review (H. Turner & Co., London).
The American Journal of Homœopathic Materia Medica.

The United States Medical and Surgical Journal.
The American Homœopathic Observer.
The Western Homœopathic Observer.
The American Homœopathist.
The New England Medical Gazette.
El Criterio Medico (Madrid).
La Reforma Medica (Madrid).
La Homœopatía (Bogota).

(We have not received these Journals for some years past.)

The Indo-European Correspondence.
The Hindoo Patriot.
The Bengalee.
The Indian Mirror.
The Bengal Times (formerly *The Dacca News*).
Native Opinion (Bombay).
The Englishman : Saturday Evening Journal.
The Indian Daily News.
Mookerjee's Magazine. (New Series.)
The Bengal Magazine.
The "East"
The Indian Spectator.
The Indian Tribune.
The Statesman.
The Friend of India.
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The Tattabodhini Patrikā (Bengali).
The Soma Prakāśa (Bengali).
The Bāmbodhini Patrikā (Bengali).
The Amrita Bāzār Patrikā (Bengali and English).
The Sandj Darpan (Bengali).
The Sakachara (Bengali).
The Saptāhika Samāchāra (Bengali).
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THE
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MEDICINE

VOL. III.] **Nov. & Dec. 1877.** [NOS. 11 & 12.

ON THE CAUSES OF PROFESSIONAL OPPOSITION
TO HOMŒOPATHY.*

By ALFRED C. POPE, M. D.

GENTLEMEN,—The circumstances under which we meet together to-day are both unusually interesting and unusually important. This year—1877—is the jubilee year of homœopathy in England. Fifty years have elapsed since the first notice of homœopathy appeared in a British medical periodical. Fifty years have passed away since the first physician who practised homœopathically in this country settled in the metropolis. And now after fifty years of bitter hostility on the part of the majority of the medical profession towards the therapeutic doctrine, upon the truth of which we have insisted, and towards those who have adopted it as the chief basis of their drug-prescription, we have, during this year, heard, for the first time, the public expression of a desire that our exclusion from consultation and discussion with the

* The Presidential Address delivered at the British Homœopathic Congress, held at Liverpool, September 13, 1877.

majority should no longer be demanded. A fitting utterance this for a year of jubilee !

While heartily sympathising with the desire that the obstructions which have been presented to the scientific culture and professional advancement of those physicians who have investigated and adopted the doctrine of homœopathy should be removed, that every encouragement should be given to *all* members of our profession to engage in scientific research ; while admitting that what has been termed the “ reunion ” of the profession is a matter of deep importance to every member of it ; I nevertheless feel that if this so-called “ reunion ” is attempted to be purchased by attenuating or obscuring any of those principles for which we have contended—principles of the truth of which we have daily experience—or if the language in which our overtures are couched is susceptible of justifying the insinuation that we are ready to acknowledge that we have overrated their importance—the effort will and ought to prove abortive ; while if, in order to conciliate opponents, we cast ungenerous reflections upon those who, during these fifty years have devoted their time and energy to develop and promulgate homœopathy, we shall be exposed, and rightfully exposed, to the contempt, the well-earned contempt, both of the profession and the public. Tactics such as these will never lead to “ an honourable peace founded on mutual respect.”

The feeling that the breach should be closed which for half a century has existed between physicians who practise homœopathically and those who do not admit that they do so, has been growing, and that somewhat rapidly, of late years. It is a feeling that all well-wishers of medicine, all who would that our profession should be worthy of the honour it expects to receive, will anxiously encourage. Most sincerely do we all desire the “ reunion ” which has been suggested, most gladly shall we welcome the “ peace ” which has been “ asked ” for. But just in proportion as this reunion is desirable, and this peace is something to be welcomed, do I esteem it as of the highest importance that no misunderstanding should anywhere exist either as to the therapeutic views we entertain, or as to what we regard as the cause of the estrangement we have always deplored.

This question of reunion is one which, in my opinion, ought to be, and, if it is to result in any good, must be treated as one

independent of any opinions we or others may hold upon scientific subjects. Professor GAIRDNER, of Glasgow, never uttered a greater truth in medical ethics than he did when he said, "No one has a title to say to any one else, I insist that you believe so, or I will disown you as a professional brother." The British Medical Association has said to the members of the profession, We insist that you do not believe in homœopathy or consort with those who do—if you do, we shall disown you as professional brethren; and this threat has been carried out.

As in therapeutics the removal of the cause of a disease is the first step to its cure, and as for the removal of the cause its recognition is a necessary preliminary, so here in dealing with the *homœophobia*—as it has been termed—which characterises so large a proportion of our medical brethren, I shall avail myself of the opportunity I have of addressing you to-day in an endeavour to point out what I conceive to be its cause.

First of all, I will ask your attention to the conclusions others have arrived at on the same point.

Dr. WYLD has told us that "the adverse and intolerant treatment we had hitherto met with from the profession arose in a great measure from the bad example shown by HAHNEMANN and his early disciples of an extreme and intolerant sectarianism on their part towards that medicine which, however powerless for good it might have become, was yet the result of 4,000 years experience and thought." Again, he says that HAHNEMANN was "the first to give offence." "That the views of HAHNEMANN were extreme and intolerant." That for the measures of injustice which have been meted out to us by our non-homœopathic brethren, we "have, to no inconsiderable extent, had ourselves "to blame." That it was the conduct of homœopathically practising physicians that "naturally led to those reprisals on the part of orthodox medicine which culminated in the resolutions of the British Medical Association in 1851." Pretty broadly has Dr. WYLD intimated that in openly acknowledging that we believed in homœopathy we had "traded on a name;" that by the use of the word homœopathic in our literature, our societies, and our dispensaries, we had, in an *ad captandum* manner, repulsive to all right thinking members of our profession, succeeded in drawing to our "consulting rooms the patients of other men." By others

we have, in various terms, been told that we have wilfully separated ourselves from the profession.

Now Gentlemen, I maintain, and I hope to be able to prove to you to-day, that the opposition which has been persistently levelled against homœopathy in this country during the last fifty years has had nothing whatever to do with the alleged intolerance either of HAHNEMANN or his early disciples; that, in the professional conduct of those medical men who have been the means of making homœopathy known throughout the length and breadth of the land, and its influence felt throughout the entire practice of medicine, there has been nothing to justify the ostracism which has existed; that in admitting our faith in homœopathy, in taking the only means at our disposal to make its advantages known, we have not been justly chargeable with personal advertising; and that, until a few years ago, it never occurred to anyone so to regard the designation of our journals, societies and dispensaries; neither has the separation which has occurred been wilful on our part.

On the contrary, the exceptional position we have been placed in has been due wholly and solely to the ignorance of the profession regarding well nigh all concerning homœopathy, to the persistency with which by the publication of palpable caricatures of it, as though they were genuine representations, the medical press has sustained, and indeed almost compelled this ignorance. The history of homœopathy in this country from 1827 to 1877 is full of evidence that an almost entire absence of knowledge respecting homœopathy, combined with many utterly erroneous and not a few equally absurd notions concerning it, lies at the bottom of all the opposition it has met with. Hence, Gentlemen, it is to the removal of this ignorance, to the substitution of facts regarding homœopathy for the assumptions which have been entertained respecting it, that we must look for the reunion which has been sought, for the peace which is to bear fruit in mutual respect, in a mutual anxiety to discover and follow truth. Therefore it is that I look upon the excellent lecture* recently deliver-

* *A Lecture addressed to the Medical Profession on "The Place of the Law of Similars in the Practice of Medicine."* By J. GIBBS BLAKE, M. D., &c. Birmingham: Cornish Brothers, New Street. London, H. Turner and Co., 77, Fleet Street, 1877.

ed at Birmingham, at a meeting of the medical profession in that town, by our Secretary, Dr. GIBBS BLAKE, as being far more conducive to the restoration of good feeling, to the renewal of professional intercourse, to the establishment of professional association in scientific research between homœopath and anti-homœopath, than I can the letter of Dr. WYLD to Dr. RICHARDSON, offering "terms of peace."

In 1827 in the *Edinburgh Medical and Surgical Journal* appears the earliest reference made to homœopathy in this country. In the July number of that journal, Mr. JOHN EDWARD SPRY published a paper entitled, *An Outline of the Homœopathic Doctrine, or the Medical Theory of Hahnemann*. It presents a brief, but tolerably accurate definition of homœopathy. It is a simple statement. No evidence is brought forward in favour of it, no argument is offered against it. Mr. SPRY contents himself with declaring the doctrine to be visionary, and consoles his readers with the assurance, that "however ingenious the theory may sound, it appears too ridiculous, in its application, ever to obtain supporters on this side of the Channel."

In the October following, the *Medical Chirurgical Review*, edited at that time by Dr. JAMES JOHNSON, in noticing Mr. SPRY'S Essay, expressed a very decided opinion respecting homœopathy. It is denounced, *in limine*, as the "GERMAN FARCE"—this definition being emphasised by being printed in capital letters! "The gist of the homœopathic system," says the writer, "may be easily and briefly stated. Hippocrates broached the fanciful doctrine that a disease should be cured by things that induce a state opposite to that of the disease, *contraria contrariis curantur*. The German professor strikes out on a path diametrically opposite, and maintains, that disordered actions in the human body are to be cured by inducing action of the *same kind*, but only slighter in degree, *similia similibus curantur*. The doctrine of antipathy had much foundation, both in reason and fact: Thus the burning heat of fever naturally suggests cooling drinks and cool air; constipation calling for purgatives; diarrhœa for astringents; soporose diseases demand irritation; irritation calls for sedatives, &c. But what shall we say to homœopathy? Do venesection and purgatives induce diseases resembling pneumonia, ophthalmia, hepatitis, and other inflammations, when these are cured by the above means? The idea is preposterous."

In connection with this extract from Dr. JOHNSON's *Review*, it is interesting to know, what I have reason to believe is perfectly true, that Dr. QUIN, who in 1827 commenced the practice of his profession in London, had, three years previously, mentioned the subject of homœopathy to Dr. JOHNSON, and by him had been urged to continue his inquiries into its merits, and having completed them, to write an article for the investigations he had commenced; and on his return in 1827 he informed Dr. JOHNSON of the conclusions at which he had arrived. The request for an article was not renewed; but on the contrary, the brief, hasty, and ignorant denunciation of homœopathy, from which I have quoted, formed the only reference to it that Dr. JOHNSON allowed to appear in his *Review*.

I cannot but regret that Dr. QUIN made no attempt to correct the erroneous impression Dr. JOHNSON's article was calculated to produce. Had he succeeded in doing so an *impetus* to the spread of homœopathy among members of the profession could not fail to have resulted; while, had he been refused a hearing, the determination to keep the profession in the dark upon all concerning this important therapeutic doctrine, which has ever marked the periodical literature of our profession, would have been even more conspicuous than it is now.

During the next few years, homœopathy appears to have attracted but little attention from the medical profession. Dr. QUIN was frequently absent from England, and, when at home, was actively engaged with the duties of a large, fashionable, and successful practice; while little or nothing was done to introduce the subject to the notice of the profession. During 1833, or somewhat later, Dr. UWINS, a physician in good repute at that time, was induced by his brother, the well-known artist, to make the acquaintance of Dr. QUIN, and from him to learn something of the new therapeutic method. About the same time, Mr. KINGDON, a surgeon in extensive consulting practice, had his attention drawn to homœopathy by gentlemen engaged in business in the city, who had heard that they could be cured more rapidly, and certainly more pleasantly, by homœopathy than by the measures ordinarily employed. An introduction to Dr. QUIN was followed by enquiry, and enquiry by clinical experiment. Dr. UWINS and Mr. KINGDON, being convinced of the value of homœopathy, desired to make it known to their professional

brethren. They endeavoured to do so, the latter in a paper read by him at the *London Medical Society* in November, 1836, and the former, in one he presented a few days later, to the *Westminster Medical Society*. The discussions reported in the *Lancet* of that date are extremely interesting. Mr. KINGDON's paper while showing some knowledge of homœopathy, evinced a serious desire to understand it more thoroughly. In concluding, Mr. KINGDON said, "after what I have seen, or, if you please, what I fancied I have seen, I feel that it is the duty of every medical man to look into it (*i. e.*, into homœopathy), for it is certain, either that a number of cases do better without medicine than with, or that these unimaginable doses of carefully prepared medicine do impress the nerves so as to influence the actions of life." In the discussion, which followed its reading, Mr. DENDY, Mr. HEADLAND, and Dr. LEONARD STEWART, said that they thought the subject to be one which it was the duty of the Society to investigate carefully. Dr. UWINS, with his larger experience, was more pronounced, and expressed his belief, that one day homœopathy would be a universal creed. On the other hand, Dr. JAMES JOHNSON ridiculed the whole subject; and Dr. WHITING, the President, following in the same strain, asked if any member had ever seen a case of peritonitis, pleuritis, or pneumonia, treated with infinitesimal doses of *aconite*—a query to which there was no response. Dr. UWINS, in the course of his remarks, had stated that he felt sure the day would come when lancets would be superseded by *aconite*, and when they would consequently "rust in their cases." A prophecy—in twenty years later literally fulfilled—which drew from Dr. CLUTTERBUCK, the eminent physician of the London Fever Hospital, the observation that "there was something shocking in an old and respected member of their Society anticipating a time when lancets would rust in their cases!" At the conclusion of the discussion, a resolution was proposed by Dr. CLUTTERBUCK, and seconded by Dr. JOHNSON, to the effect that homœopathy was unworthy of consideration. It was, however, withdrawn on the understanding that the subject should never again be mooted in the Society.

During the same month a Dr. BUREAU RIOFFREY read a paper on *Hahnemannism* at the *Westminster Medical Society*. He entered into no examination of HAHNEMANN's views, but occupied his

time in denouncing them as a tissue of absurdities, offensive to common sense and contrary to observation. Dr. ANTHONY TODD THOMPSON, when speaking on this occasion, regarded the whole subject as so visionary that it could only be treated with ridicule. Mr. COSTELLO said that in his opinion all practitioners who adopted homœopathy were actuated in so doing by sordid motives, and sordid motives only. A fortnight later and Dr. UWINS read, at the same society, a paper on the *Modus Agendi of Medicines*. In it he supported the homœopathic principle, within certain limits, and in a tentative manner. He referred to "a thing called an editorial article, in a bungling medical journal, written by some one who considered homœopathy and small doses to be one and the same thing. Small doses," Dr. UWINS argued, "were important, nay glorious incidents, arising out of homœopathic research, but they were no more homœopathy itself than might was always right." Dr. ADDISON was the chief speaker at the close of Dr. UWIN's paper, and he asserted that the followers of HAHNEMANN were either persons only fit for lunatic asylums, or such as were influenced merely by sordid motives.

The next incident, which points to the mode in which homœopathy was received by the profession, occurred two or three years subsequently, when the late Dr. EPPS sent to the *Lancet* reports of a few cases in which he had used *arnica* with advantage. These were inserted; but on Dr. EPPS, who was a personal friend and political partisan of Mr. WAKLEY's, sending other illustrations of disease cured by homœopathically selected medicines—they were returned with a note from the sub-editor, stating that the publication of such cases was, owing to the avalanche of letters they had received protesting against those that had already appeared, impossible.

In 1846, the late Sir JOHN—then Dr.—FORBES published in the *British and Foreign Medical Review* that well known article, "Homœopathy, Allopathy, and Young Physic." This was the first, and even now it is, with, I believe, but two exceptions, the last occasion on which homœopathy was adversely reviewed by one possessing some degree of theoretical and literary acquaintance with it.

With the tone of this article, with the manner in which the character and labours of HAHNEMANN were reviewed, no homœo-

pathist could do otherwise than feel satisfied. Nay more, the appearance of a critique, evidently written in a spirit of fairness, gave us hope that at last we were likely to be met in a manner which would compel honest enquiry—an enquiry which would ensure the triumph of truth over error. But what was the result? Sir JOHN FORBES was driven from his editorial chair; he had ventured to criticise homœopathy with a degree of fairness and honesty which the medical profession of that day refused to endure.

Finally we arrive at 1851, when the *British Medical Association*, in a series of resolutions, denounced homœopathy, all who practised homœopathically, and all who co-operated professionally with those who did so.

Such, Gentlemen, has been the manner in which the medical profession has received the doctrine of homœopathy. The discussion of the subject was burked from the outset; all enquiry into it was not only discouraged, but any enquirer rendered himself liable to be represented by his medical neighbours as a person who was either partially demented, or a mere seeker after filthy lucre, as one regardless of the lives and interests of those who confided in him. It was impossible to bring the *rationale* of homœopathy before any medical society; any public examination of the results accruing from the practice of homœopathy on a large scale was out of the question; the medical journals were closed to any mention of it, save in terms of ridicule or of misrepresentation.

Every professional avenue through which enquiry might have been instituted, and some definite conclusion have been arrived at, was barred. To impress a knowledge of homœopathy upon the profession through the profession, had been, by the profession, rendered impossible.

Had all this arisen through any unprofessional conduct on the part of the representatives of homœopathy in this country? For several years Dr. QUIN was the only physician practising homœopathically in England. No physician was ever more scrupulous in deferring to the susceptibilities of his medical brethren than was Dr. QUIN. So much so was he, that he has incurred the charge of not having been sufficiently active in making known the important truths of which he had the honour and the res-

possibility of being the British pioneer. Dr. UWINS and Mr. KINGDON both resorted to medical societies to expound homœopathy; Dr. EPPS sent the reports of his cases to the leading medical journal of the day; a wealthy banker offered, through Dr. WILSON, to bear the expense of filling a number of empty beds—beds empty for want of funds—in St. George's Hospital, that homœopathy might be publicly tested; but all was to no purpose.

Gentlemen, there was no intolerance among the representatives of homœopathy. None was charged against them; they took no unprofessional methods for making known those therapeutic principles of which they were, in proportion as they felt their value bound to disseminate the knowledge. They had no secrets; they professed no mystery; they desired above all things to communicate every information regarding the mode of practice they had learned the value of. The great body of the profession refused to afford them any opportunity for doing so. Was then homœopathy to be excluded from all discussion because the profession would not listen? Was Dr. EPPS to be silenced because the *Lancet* would not permit him, through its pages, to communicate to his professional brethren the results of his clinical observations? Were the sick poor to be denied the advantages of homœopathy, because a physician who practised homœopathically was prevented from holding office in a hospital? I trow not! If homœopathy could not be examined before the usual tribunals in matters medical; if it could not be made known through the ordinary professional channels; if it could not be illustrated in established charities—other *media* must be found. Hence arose the pamphlet setting forth what homœopathy was; hence came the handbook of domestic medicine; hence came the homœopathic periodicals; hence came the Homœopathic Dispensary; hence came the Homœopathic Society; and hence has come—and that none too soon—the London School of Homœopathy. Had homœopathy been enquired into in the same way as other topics of professional interest were examined, no institutions of this kind would have arisen. It is, indeed, very doubtful whether the word “homœopathist”—from the continued use of which some, who owe a large proportion of their power to do good from homœopathy, would seem now to shrink—would ever have come into general use.

Assuredly it would not have done so to anything like the extent it has done.

When in 1851 the British Medical Association prohibited its members from practising homœopathy, and from associating with those who did so, we were in possession of what study and experience had convinced us was a therapeutic truth of the highest importance; a truth, the importance of which was rendered all the more conspicuous by the scepticism, which prevailed among nearly all the more experienced physicians of the day respecting the value of drugs in the treatment of disease; a truth, the importance of which was rendered yet greater still, by the fact that it provided a means for the discovery of specifics—the very kind of discovery in which Professor ALISON and others had declared the hope of therapeutics to lie.

By acting upon this great therapeutic truth, the practice of medicine, from being exclusively traditional and empirical, became one based upon a strictly scientific foundation. Our drug remedies were chosen upon a principle the validity of which the records of the past, and the experiments of recent times had proved to have so wide a range as to have been, not without reason, regarded as universal. The mode of studying the properties of drugs was one that was independent of tradition, was exact in its method, and fruitful of information to an extent no plan previously proposed could boast of. We were also convinced that in order to cure, the necessity for disturbing the organism by inducing the physiological action of drugs, injurious in proportion as they were powerful, did not exist. That, when prescribed homœopathically, medicines were best exhibited in a form, and in a quantity, which precluded the possibility of any injury being done to the patient.

These, Gentlemen, are the principles, of the truth of which we were convinced, of the immense importance of which we were well assured. These were the principles that the *British Medical Association* ordered us to abandon; for entertaining which the Association threatened us with every species of annoyance. We were not, indeed, excommunicated from the profession—though efforts were made to bring influence to bear upon the College of Surgeons in London, and the College of Physicians in Edinburgh, to remove the names of such of their members as were known to

practise homœopathy. Thus to separate us from the profession to which we had been admitted, thus to cut us off from it was found, however, not to be within the power of any man or any body of men.

In the presence of these facts, what was the duty of those who had seen reason to believe that homœopathy was true? Were they, in meek submission to an intolerant majority (a majority utterly uninformed on the doctrines they denounced), were they, haunted by the fear of being regarded as quacks, and represented as impostors, to abandon principles they knew to be scientifically sound, principles they had found to enable them to control disease so much more completely than any they had been wont to rely upon, principles that were known and felt by all who trusted them, in their professional capacity, to be of the highest advantage to them? NO!—a thousand times, NO! The duty of all who believed in homœopathy then was perfectly clear. In proportion as they believed in these principles; in proportion as they valued them; in proportion as efforts were made to prevent their being testified to; in proportion as obstacles were placed in the way of their development and elaboration, was it their duty to extend the knowledge of them; to cultivate them; to place their advantages within the reach of the sick among the poor. Prevented, as I have shown we were, from performing these obligations through the ordinary channels of professional literature, professional societies, and established hospitals, we were compelled to issue periodicals, which should direct special attention to the great therapeutic question, for the due setting forth of which we had, by virtue of our knowledge of its importance, become responsible; to institute societies in which these principles might be discussed, their range of operation gauged, the best method of putting them in practice ascertained; and to open hospitals and dispensaries in which their application might be illustrated. And I thank God, Gentlemen, that those upon whom lay the responsibility of doing all that could be done to advance the interests of therapeutics in the direction of homœopathy, were equal to this their responsibility, that they did not allow the fear of the taunt, the unjust taunt, of proceeding in an unprofessional manner, to prevent them from substantiating the accuracy and worth of these principles. *They did make known,

by book and pamphlet, what homœopathy was, and how homœopathy might be practised; they did meet together, and, by discussing questions of pathological, therapeutic and clinical interest, endeavour to add to the knowledge already acquired, and correct the observations they had made; they did establish hospitals and dispensaries where homœopathy might be studied, and the poor might receive the advantages to be derived from this therapeutic method.

* In so working, in thus developing homœopathy, no intolerance was shown, no unprofessional conduct exhibited. Nothing was done which a true sense of duty did not compel to be done—nothing, that the obligations we undertook on admission to the profession, did not render it incumbent upon us to do. To have done less would have been to hide our talent in the earth, at the bidding of an intolerant, and, so far as homœopathy is concerned, an ignorant majority. Had we done less, we should have been unworthy of the profession to which we belonged, should richly have deserved all the hard things that were said of us, all the ignominious epithets which were so unceasingly hurled at us.

Further, the propriety of the course taken has been abundantly justified by its fruits. The practice of homœopathy, though in a scientific manner limited to a comparatively small body of medical men, empirically pervades the whole practice of medicine. Compare the treatment of disease to-day, with that which prevailed five-and-twenty years ago; compare the text-book of *Materia Medica* of 1877 with that in use in 1850; compare the method of studying the action of drugs pursued a quarter of a century since, with that which is taught to-day; compare the amount of medicine prescribed a few years back, with that which is ordered now! In each direction the principles we have contended for, which we have taught and exemplified in practice, are seen to be operating. And recollect, gentlemen, all this has been accomplished by those very means which are now represented as “Trading on a name,” as accounting, more or less, for the antagonism we have met with, as having “naturally led” to the “reprisals” to which we have been exposed.

I have said enough, and more than enough, to prove that those members of our profession who have investigated and adopted the homœopathic method of drug selection, are not in any way

responsible for the exclusion from professional privileges with which we have been visited. That here and there individuals practising homœopathy may have offended against the *lex non scripta* of professional ethics I do not doubt; but that as a body we have done so I utterly deny. To use the words of the late Sir John Forbes—"that there are charlatans and impostors among the practitioners of homœopathy cannot be doubted; but, alas, can it be doubted any more that there are such, and many such, among the professors of orthodox physic?" I assert, without fear of contradiction, that medical men practising homœopathy have conducted themselves with the fullest regard to professional decorum, and they have done so in spite of much provocation and many temptations to the contrary.

From the sketch I have now given of the manner in which homœopathy was received by the profession, from the determination which has been evinced to admit of no enquiry into the doctrines expressed by that word, we must conclude, that the efforts which were made to stamp it out were made, not on account of any intolerance, any sectarianism on the part of those who expressed their belief in it, but solely because the profession were unaware of what was understood by homœopathy, because of the misrepresentations—misrepresentations never allowed to be corrected—which the medical press has never wearied of circulating regarding it, and all who practised it.

And thus, notwithstanding that the principles regulating drug selection, the study of drug action, and of dosage, upon which we have so strongly insisted as true, are daily observable in the general practice of medicine, the same impediments to professional association as those in force five-and-twenty years ago are present to-day. Notwithstanding that the most popular works on therapeutics bear testimony—silent testimony—to the truth of homœopathy, this method of prescribing is still denounced in very much the same terms as those which have been employed since first it was introduced into this country. Why this is so, is an enquiry worthy of some consideration.

True it is, that those practitioners who have adopted the suggestions of RINGER and PHILLIPS are, to all intents and purposes, daily practising homœopathy in a large number of cases. But it is unfortunately also true, that they are unaware of the

relation subsisting between the physiological action of the drug they use, and the pathological condition they prescribe it to remedy. They know nothing of the source whence Dr. RINGER and Dr. CHARLES PHILLIPS derived the therapeutic hints they have communicated to them. They know nothing of the principle which first pointed to them as remedies in the very conditions in which they use them. The statements made known to them through these channels they accept without enquiry, just as they have ever been in the habit of accepting similar statements regarding the remedial properties of drugs, viz., on the *ipse dixit* of some favourably reviewed author.

Hence, I conclude, that the continued opposition to those members of the profession who openly admit that they derive their drug-therapeutic knowledge from homœopathic research is due now, as it was fifty years ago, to ignorance of what homœopathy means.

Of late years we have been assured that the opposition we now encounter from our medical brethren is owing to the fact that we are known by a distinctive name. We are called "homœopathists," and we admit that we are "homœopathists." Yes, we admit that we are homœopathists. In so doing we acknowledge that we regard the law of *similars* as that therapeutic principle which is best adapted for the selection of drugs to cure disease. We do not, however, assert that it is the only principle on which it is necessary for the physician to act in the treatment of every case that comes before him, or in every part of every case; neither do we deny that disease is ever cured by remedies prescribed on other principles.

Within the last month the *Lancet* has told us that when we "give up a profession of the homœopathic system," that is, when we are prepared to allow that homœopathy is not true,—we shall no longer be homœopathists: and *à fortiori*, so long as we do acknowledge the truth of homœopathy are we homœopathists—and that I admit is correct enough. We are also told that when we cease all connection with homœopathic societies, hospitals, and journals, we shall cease to be homœopathists. That I deny. Whatever may be our connection with societies, hospitals, and journals, if we select our drug remedies on the homœopathic principle we are homœopathists. But, did we

discontinue our connection with such institutions, we should cease to have any opportunities of making homœopathy known. And that it is, and not, professional reunion, which the *Lancet* so earnestly desires.

As I have already stated, the frequent and general use of the word "homœopathist" is traceable to the fact that homœopathy has never been allowed to be a fitting subject of enquiry through the ordinary channels for the investigation of professional questions. Had the practitioners of homœopathy not been excluded from medical societies, journals, and hospitals, the principles they have striven to promulgate, and as I have shown, have so considerably succeeded in forcing upon the practice of medicine generally, would never have come so prominently under the notice of the public as they have done. Doubtless, some physicians would have rejected the homœopathic theory, while others would have adopted it; and probably enough the latter would have been known as homœopathists, just as the followers of BROWN and BROUSSAIS were known as Brunonians and Broussaisists; but this distinction would have been restricted to professional circles; no ostracism would have ensued in the case of the homœopathist, any more than it did in that of the Brunonian or the Broussaisist of the past. Dr. WYLD, on a recent occasion, said "it has been argued that the followers of BROWN and BROUSSAIS were not ostracised because they enrolled themselves as Brunonians and Broussaisists. This reply," continued Dr. WYLD, "is ingenious, but not logical; because they never attempted to open Brunonian dispensaries, and selfsupporting Broussaisistic medical institutes. They never traded on their name, drew to their consulting-rooms the patients of other men." The reply to this, not very generous, rejoinder is, that the followers of BROWN and BROUSSAIS were never on account of their therapeutic views excluded from filling posts at hospitals and dispensaries. Had they been so, doubtless institutions, where they could have put their views to the test of public practice, would have arisen, and having arisen, would have been known by some designation more or less indicative of their *raison d'être*.

It is, then, because of the opposition the profession has ever shown to the investigation of homœopathy, because of the

hindrances to enquiry it has ever placed in the way of the enquirer, because of the determination with which all who practice homœopathically have been prevented from filling public appointments in existing medical charities, that such as are now known as homœopathic have been so called.

It is the professional opposition to homœopathy which is responsible for the word homœopathist, not the word homœopathist which is responsible for professional opposition to homœopathy.

Now, however, we are told that if we can get rid of the words homœopathist and homœopathic, the chief obstacle in the way of our being eligible for posts of professional honour, as well as for admission to professional societies, will be done away with.

So far as a certain number of medical men are concerned, I believe that this proposition is true. But, as regards the great majority, we have no evidence that our abandonment of these terms would in any way influence them in doing us justice. How, I would ask, are we to speak and write of the doctrine signified by the word homœopathy without using that word? The word homœo-therapeutics has been proposed as a substitute; well, Gentlemen, "a rose by any other name would smell as sweet," and possibly the word homœo-therapeutics might come into general use in a few years. But it lacks the historical significance of that we now employ. And yet more, this discussion about a word, a name, this dispute as to whether we shall express our meaning in seventeen letters instead of in ten, strikes me as somewhat puerile, as worthy only of the schoolmen of four or five hundred years ago—and not of the medical profession of our time.

Then, again, with reference to the word homœopathist; we find that throughout all time the advocates of certain doctrine in science, certain principles in politics have ever been known, and I expect ever will be known, by a name derived from the word used to define such doctrine or principles. Such a consequence seems to me both natural and inevitable. If, then, we are determined to maintain the thesis that homœopathy is true, we cannot avoid being regarded as homœopathists, any more than the devotees of spiritualism can escape being termed spiritualists. Hence, Gentlemen, I do not see how the disuse of the words homœopathy and its derivatives is to be accomplished, so long as

the opposition to homœopathy continues in the shape it has assumed during the last half century.

As I said just now, it is the opposition to this method of drug selection which has led to the very general use of the word, and it can only be by the cessation of this form of opposition that the word can ever cease to be so generally employed as it has been.

Another excuse for the ostracism we have had to endure is found in the hypothesis that we are "sectarian," that homœopathy is "sectarianism." This word sectarian—what is it but a term of reciprocal reproach bandied to and fro between opposing parties.

Originally, the word "sect" signified a following, taking its derivation from the verb *sequor*. It is first met with among the Grecian schools of philosophy. THALES, for example, was the founder of the Ionic sect of philosophers; that is to say, the pupils he taught at Miletus in Ionia adopted his method of philosophising in preference to that of PYTHAGORAS, the founder of the Pythagorean school or sect. Again, among theologians the word sect is used to denote a "separation," a "cutting off" being derived in this instance from *seco*. Upon certain more or less understood principles, one body of Christians takes the title of "Church." Others, whose enquiries have led them to regard as erroneous some of the doctrines taught by the "Church," have united themselves together for the public worship of God. They have separated themselves from, have cut themselves off from what is called the "Church," and formed themselves into what is regarded as a sect.

Is this word sectarian applicable to us as homœopaths?

1st. Are we followers of HAHNEMANN? In the sense in which Dr. MATTHEWS DUNCAN is a follower of HIPPOCRATES, or Dr. WILKS of SYDENHAM, so are we followers of HAHNEMANN. HAHNEMANN enlarged our knowledge of therapeutics, precisioned our method of drug selection, defined the best, the only really satisfactory plan of ascertaining the action of drugs. We have gladly availed ourselves of his researches; and, yet more, have warmly acknowledged our obligations to him. But, on the other hand, we have neither done, written, nor said anything implying that blind faith in all that HAHNEMANN ever wrote or taught,

which the disciple of THALES or PYTHAGORAS would have deemed it his duty to have exhibited as a member of his sect. By none have the doctrines HAHNEMANN taught been so rigidly scrutinised, as by those who have most earnestly contended for the truth of homœopathy ! While it is undeniable that some of his earliest followers, under the influence of that immense force of character which HAHNEMANN ever exhibited, did, in obedience to the stern demands he made upon them for unhesitating confidence in every theory he broached, accept as true much that investigation has since shown to be untenable hypothesis ; it is equally true that it has been by other of his disciples that the fallacies into which he was betrayed were most completely exposed.

We accept so much of HAHNEMANN'S teaching as experience has proved to us to be sound, unhesitatingly rejecting whatever in it we have found to be erroneous.

In the sense, then, in which the word was anciently used, we cannot be said to be sectarian.

2nd. Again, have we cut ourselves off from the profession, have we separated ourselves from it as the Church of England is said to have done from that of Rome, or the Baptist from the Church of England ? Certainly not. A proportion of the members of the profession, having formed themselves into societies, have resolved not to associate with us. It is not we who have refused to have any intercourse with them. We are ready and willing to co-operate with them in their efforts to promote the science and art of medicine, are anxious to learn from them, and discuss with them, the results of their observations ; to communicate to them, and carefully examine the criticisms they have to offer upon such conclusions as our experience may have led us to form.

The sectarianism which prompted the exclamation, "Stand by, for I am holier than thou," is confined to that portion of the profession which rejects, without examination, all that HAHNEMANN ever taught, and rejects it mainly because he taught it. The sectarian position, I conclude, is therefore inappropriately assigned to homœopaths. We are not the blind, unreflecting followers of any man. We are within, not without the pale of the profession of medicine.

Though the form which characterises the opposition to homœopathy to-day, varies little, if at all, from that which it has taken

during the last fifty years, the tone in which homœopathists are spoken and written of is far less acrimonious and abusive than it was. Ere the influence of homœopathy had been felt in this country, those who had adopted it were described as "lunatics"; when it had grown to be a power, they were set down as "knaves or fools;" now that the teachings of HAHNEMANN have become more or less generally absorbed into the practice of medicine, we are pushed aside as "sectarians."

The causes of the opposition are the same now as they ever have been—an almost total absence of any information of what is meant by homœopathy; an absolute refusal to ascertain what is understood by it; an unrelenting determination to suppress, by every possible means, every opportunity presented of learning what it really is, and how it can be practically tested.

All the many and various means which have been used to "stamp out" homœopathy, have not prevented this great principle from gaining an ascendancy in practical medicine, it will now be impossible to suppress. Silently, secretly, and amid many apparent denials, homœopathy is, for all practical purposes; largely taught in the medical schools of this country. True, it is taught after an empirical manner only; this, however, is but the prelude to its being taught scientifically. Gentlemen, it is to the work we, and others who have preceded us during the last fifty years, have done, that it is owing that homœopathy is taught empirically—it depends upon those of us who are now actively engaged in making daily use of the truths that have been handed down to us, that homœopathy shall be taught scientifically. Having obtained so much, shall we now remove our hands from the plough? Shall we rest satisfied with the empiricism of SIDNEY RINGER—or shall we press onward until that empiricism receives the thoroughly scientific interpretation, of which we know it to be susceptible? If we believe that in homœopathy are contained those advantages we in the past have asserted that it possesses; if we are mindful of the reputations of those who have preceded us in originating, sustaining, and developing homœopathy; if we are conscious of the elevating, and intellectually satisfying character of, a scientific therapeutics, and of the uncertainty and disappointing features of a therapeutic method that is merely empirical; if, in a word, we feel that in promoting the progress

of homœopathy, we are performing our duty to science, to our profession, and to the public—we shall never cease to maintain, to illustrate, and to enforce by every means in our power, those medical doctrines, of the truth of which the public avowal has brought upon us so much unmerited obloquy.

Gentlemen, there is no room for compromise ; there is no cause for compromise ; nay more, I feel perfectly assured that, were we ready to sacrifice, in however small a degree, any principles of the verity of which we are assured, for the purpose of conciliating those who differ from us, with the view of acquiring certain professional advantages from which we are now excluded, to the end that we may pursue our several professional careers with greater ease and comfort to ourselves—we should in so doing draw down upon us the contempt of those who have arrayed themselves against us—and, what is worse, we should most thoroughly deserve to be despised by them.

If homœopathy is not true ; if it can be shown that the doctrine of similars is a false doctrine ; that the study of the physiological action of drugs on the healthy, is not the best way of ascertaining the properties of such substances ; if it can be proved that a small dose of a homœopathically selected medicine is not adequate to the end for which it is prescribed—let no one, who has hitherto believed that these principles are true, shrink from demonstrating and admitting what he now feels to be his error. But, so long as we do believe that evidence in abundance has demonstrated the reality of these principles, so long as we have reason to believe that they are not only true in themselves, but collectively present us with a therapeutic method of far higher value to physicians than any that is taught at the present day—so long, I trust, shall we persevere in declaring their truth, persevere in teaching their practical application, persevere in pressing them upon the attention of the profession.

While earnestly, constantly, and courteously contending for and propagating the doctrine we have professed to believe, we must also insist upon the restoration of those rights and privileges of which, by the arbitrary vote of a tumultuous meeting, we were six and twenty years ago unjustly deprived.

While I freely admit that there is no professional obligation imposed upon one physician to assist another in the way of con-

sultation, I deny that any body of men has a right to say to its fellows, You shall not meet in consultation, on any plea whatever, those who believe in such or such a doctrine or theory of medicine; still less has such a body the right to enforce its mandates by threats of deprivation of professional status in the event of their not being complied with.

Again, I acknowledge that it is perfectly within the scope of any society to decline to receive any member of the profession it may regard as objectionable; but no society can justify the refusal of its membership to any one on the ground that his therapeutic views differ, however considerably, from those of the majority of its members.

Equally unjust, and still more detrimental to the interests of science is it, that the avowal of a belief in therapeutic doctrines, which have not been enquired into by the majority of the profession, should suffice to prevent a physician from holding a public medical appointment.

On the removal of the disabilities which exist in these directions we must continue to insist, until the good sense, right feeling, and increased information of a majority are sufficiently in the ascendant to do us justice. From all that has recently come to my knowledge I am glad to be able to believe that this period is far less distant than the past history of homœopathy might lead us to suppose. We look for their removal on the ground that every member of the profession is bound to act according to *his* experience and knowledge, and not according to the experience and knowledge of his neighbour. Medicine is not a completed science, is not a perfected art—very far is it from being either. There is no finality in homœopathy. One of the most thorough-going homœopaths, and one of the best instructed physicians who ever practised homœopathically, has said: "The law itself may be but a stepping stone to a wider generalisation, which shall one day embrace both it and something beside, and which shall make clear some things which we now see darkly."—*Homœopathy the Science of Therapeutics*, p. 27. Much have we corrected in the teachings of HAHNEMANN, and doubtless, as observations multiply, as the various avenues by which research is made increase in number and become more thoroughly explored, will the doctrines we at present hold be more accurately formulated,

what of error attaches to them be removed, and principles of a yet higher and more far-reaching character be discovered.

In accomplishing this great work every member of the profession must take a part. Homœopathist and the opponent of homœopathy must work together, each animated with but one purpose, each rising superior to the views his previous investigations have led him to confide in, each prepared to regard impartially the new lights evolved by deeper and yet deeper research, both together striving with energy and zeal for the development of truth, for the fixing yet more securely still the foundations of that science on which is built the most beneficent of all the arts—the Art of Medicine.—*The Monthly Homœopathic Review*, October 1877.

HYGIENE..

BY DR. G. C. ROY, M. D., F. R. C. S. LONDON.

Hygiene is that branch of science which relates to the laws of health. It has been rightly called Preventive Medicine. It teaches us not only how to prolong our existence, but also how to make our lives comfortable. The universe is governed by definite laws, and how much the knowledge of those laws has enhanced our comfort by placing within our reach powers which in remote ages used to be looked upon as obedient only to the will of the Almighty, and to which the frail human mind bowed down only with a feeling of awe and reverence, is known only to men of science. Unapproachable as they at one time were believed to be, the progress of science has triumphed over them, and thus given mankind the mastery over nature. Phenomena, that were inexplicable and used to be ascribed to supernatural agency, have yielded their mystery to the light of science. To the ignorant mind the world appears as chaos under mysterious influences. But the mind enlightened by science finds in every step marvellous regularity and precision. He does not consider thunder as the fiery rod hurled down from the celestial throne to wreak its vengeance on the head of a devoted victim, but only as a natural phenomenon which he can control at will. He does not look upon plagues as visitations of heaven, but as evils traceable to causes which can be mitigated, if not altogether removed. Science and superstition are incompatible as darkness and light. This is an age in which the human mind has been singularly successful in its efforts to discover truth in every department of nature. Science has not, as has been imagined, loosened the ties which bind the creature to the Creator; it has, on the contrary, served to bring out the attributes of the Almighty in greater effulgence and glory.

In order to live and live with comfort and happiness in this world it behoves every man to know the laws which govern the continuance and well-being of life. A knowledge of hygiene therefore should not be confined to the medical profession; it should constitute a part and parcel of general education. The knowledge spreads the greater and more tangible will be the benefit derived therefrom. For it is on the carrying-

out of its principles by every member of the community that the full complement of happiness can be secured. What avails if Ramnarayan tries to observe the laws whilst his neighbour Hurry Dass glories in their breach? A focus of disease has the tendency to contaminate the surrounding atmosphere. It is therefore in the observance of these laws in their entirety that the health and comfort of a community depends, and the more this knowledge spreads amongst the masses, the greater will be the boon to the country and to mankind. Dr. Richardson's Hygiea was nothing more than an ideal town inhabited by men, every one of whom understood and observed his duty to himself and to his neighbours. If the existence of such a place were possible under the sun, diseases would be well nigh extinct, and except death from accident or senile decay, we would be able to expunge from our category of evils a thousand diseases that count their victims every year by millions. But such a state of perfection has not been destined for man to attain. Its very continuance would frustrate its object. The population would increase to an alarming extent in absence of any premature death, and the world would be too small for its inhabitants. There would be an excessive strain to procure food for ever-increasing generations, and the constant wear and tear consequent upon the struggle for existence together with the evils arising from overcrowding would bring about a relapse of the former condition. There is nothing in this world which we can pronounce as productive of absolute good or evil. In the imaginary state of existence just described even death would be a desideratum. Society, as at present constituted, has many necessary evils to contend against. Diseases, such as syphilis, small-pox, cholera, have no existence in the wilderness. The more the intercommunication between the races of mankind the greater the dissemination of disease. The state of civilization of a country is generally indicated by the extent of its commerce. Whilst commerce enriches a nation, it reduces the population by importation of diseases previously unknown. It was the other day that the Fiji islanders discovered how dearly they paid for the advantages of traffic with British merchants by the importation amongst other things of the measles, the mortality from which was so heavy that it all but depopulated the native inhabitants. Amongst

ourselves the dengue was a novel importation from the Arabian coast, and no age, sex, or position was spared from its racking agony from one end of India to the other. To secure therefore the advantages of commerce without its disadvantages, the laws of quarantine have been instituted, and though it cannot grapple successfully with all foreign inroads, yet it staves off for a time the attendant evils and keeps the enemy at bay. Thus the penal settlement of India, Port Blair, is under strict official surveillance, and enjoys complete immunity from cholera or smallpox, though not far removed from what is called the bed of origin of those diseases. But it is this struggle for existence that brings out the brighter qualities of a nation. It is necessity that is the mother of invention, that impels men to find out remedies for evils, and by constant application and thought to strike out new paths for surmounting the difficulties.

Doubtless, before the formation of society and when the world was yet in its infancy, the duration of man's life was not limited to three score years and ten. Whatever value we might attach to the mythological tales of Satya and Trata Yugas, when man enjoyed life up to a 1000 years, the presumption is strong in proof of his longevity when those fell diseases were unknown which are so common now. But it may be asked that if this wild state of society is so favourable to long life, how then account for the fact of the gradual extinction of the wild aboriginal tribes of Australia and America? There are other causes at work in those remote countries that tend to keep down the number of their populations. Limited as is the circle in which they live and move, they have their being by constant intermarriage amongst their own blood relations. They have to live in the interior of jungles where malaria exercises its deadly influence. Their struggle for existence is greater inasmuch as they have to contend against the wild beasts of the forest and depend upon mere chance for their very subsistence. From these disadvantages, civilized society is exempt, and if all its members only knew how to live properly what happiness would it not enjoy. Cleanliness, which is only one of the requirements of hygiene, has been justly described as next to godliness. And in fact, the relationship between mind and body is so intimate that they act and react upon each other. The outer frame influences the inward man, and it is upon the soundness

of the former, that the soundness of the latter depends. Contrast the sour and peevish disposition of a sick man with the hale and hearty cheerfulness of a healthy youth. To the former, the world is not his friend, nor the world's laws! It is therefore of essential importance to promote the healthy growth of the body that the fruit, it may yield, may turn sweet and wholesome. Man has been endowed with free will, and it is for him to choose between health and disease. Hygiene, as preventive medicine, is of greater importance than therapeutics or curative medicine. For, if to be forewarned is forearmed, I consider there is greater credit in preventing a conflagration than in extinguishing the fire when it has reduced all to smoke and ashes. When once disease attacks an organ, it leaves it permanently damaged, and the least cause will have a tendency to upset its equilibrium of action. Which of us would rather like to have our arms or legs broken and get them reset, than take precautions to prevent the occurrence of the accident? Yet strange enough, a science of such importance was not recognised until a few years ago. It is only within my own recollection that the universities, both here and abroad, have taken steps to institute chairs of hygiene. Its truths lay scattered until the master mind of the late Dr. Parkes attempted to embody them into a systematic science. His name will ever be remembered with gratitude by the millions whose lives his favorite science has served to save from untimely end. Expositions of its general principles from time to time have appeared in the Indian Medical Journals from the pens of such eminent men as Sir Ranald Martin, Drs. Chevers, Ewart, &c., but their writings were intended either for the European troops or for the guidance of their own countrymen in tropical India. Truth is truth all over the world, and what is heat and light in the arctic regions will remain the same in the tropics. Yet climatic peculiarities and social differences need some modification of hygienic rules, and few will try to gainsay the fact that the mode of life of Europeans is inapplicable to the natives of India, that the amount of exercise necessary to keep health in England will be ruinous to one's health in this country, and that whilst in the former, houses require to be built on the principle of excluding all chances of draught, in the latter they should be doors and windows in every direction to allow

of free ventilation or continuous ingress and egress of air. Construction of houses on this principle will reduce to a minimum the chance of contamination of the air inside the house by sewer gas in towns where large underground drains are connected with closets by means of pipes. There are social peculiarities, such as early marriage and seclusion of females, which equally with climate and soil determine the average duration of life and the physique of the people. Poverty of the masses is a great drawback to the progress of sanitary work in India, and sanitary instructions, to be effective, must be as little expensive as possible. For there is no use preaching improved dwellings to the people when poverty impels them to seek shelter within any available hut of mudwall thatched with straw or reeds. There is no use denouncing them as a nation of rice-eaters when that rice they can hardly afford to have more than once a day. Look at the famine that stares the masses at every unusual change of season, and who with a grain of common sense in his head would advise the people to adopt any expensive mode of clothing when they have barely the means to make themselves decent? Yet there are changes that can be effected without any very expensive investment. Thus it requires very little expense for a man to cut out a drain round his house for superficial drainage, instead of allowing the water to sink into the basement of the house or stagnate in excavations and hollows, which become afterwards the repositories of filth. The cow-dung collected for manure may be deposited a few yards away or carried into the field, instead of being heaped up next door to the windward side.

Most of the truths of hygiene have been gathered from experience. According to the state of society and its intellectual advancement there exist certain beliefs or rules for the preservation of health. There is ample proof to show that our forefathers were not without a knowledge of the necessity of such regulations, and they mixed them up with their religious observances in a way that seldom failed to exact unscrupulous adherence. The social habits of the Hindoos were eminently adapted to the climate of the country in which they lived. Thus it is enjoined, that every man should rise early from bed and walk out of the village to the field to satisfy the calls of nature. This indicated early open-air exercise, and had for its object preservation of the villages from

accumulation of filth. Even the economy of utilizing human ordure as manure was not neglected at such an early age. At a time when deodorants were not in vogue, dry earth was extensively used for the purpose of purification, and we find the system adopted in the present day for the conservancy of towns and jails. Inasmuch as an early bath in a running stream is conducive to health and vigour in a tropical climate, it was observed with religious scrupulousness, and no man was considered pure for the day who had not a thorough wash of his person. Lest such ablution be performed in the impure water of a tank or well, the water of a running stream was sanctified, so that the desire of salvation, if not of cleanliness, might induce people to seek for the benefit of a bath. In those dark ages, there was no extensive system of conservancy likely to pollute a running stream, and for drinking purposes such water was always preferred to the water of tanks and wells, which were sunk only for irrigation and for such ordinary purposes as washing, gardening and the like. To encourage full digestion of the meals before the stomach was loaded, a complicated system of worship was introduced, so that none could break his fast for the day without going through these laborious ceremonies. The meals consisted chiefly of rice and vegetables with a complement of ghee and milk, and who would deny that these, when taken in fair proportion, contain all the nourishments that are requisite for the healthy growth of the system? Ghee forms the oleaginous constituent of our food, milk chiefly the nitrogenous, and rice and vegetables, the starchy and nitrogenous portions combined. Every man, high or low, had a dairy of his own, and the cheapness of ghee and milk brought them within the reach of all. The lower classes of society, from whom were recruited the soldier and the chowkidar, and from whom extra personal vigour and courage were required for the safety of the community, were privileged to take meat in the shape of goat's flesh, but beef and pork were strictly forbidden. The wisdom of such prohibition cannot be too highly admired. It would have been suicidal to the community to sanction the butchering of cows that contributed so much to their welfare and comfort by yielding the delicious milk which formed a principal constituent of their daily food, and fearing that in absence of fresh importation the breed of cattle might be exterminated, their preservation was enjoined.

with the force of a religious commandment. Pork is more difficult of digestion, and is infested with parasitic disease, which is very injurious to the human constitution. Besides, the pigs performed the work of conservancy, and their existence was as much necessary to the sanitary condition of a village as the present system of municipal arrangements. Wine was religiously interdicted, and its evil influence is now apparent amongst the society that have outgrown the wholesome and sage limitations of their ancestors.

The funeral rites of cremation or burning of the body was no doubt enjoined from a sanitary point of view, and the advantage of it is now being forced upon the civilized world as the best and safest method of disposal of the dead.

How many Hindu families, I ask, nowadays conform to the habits of their forefathers? It is chiefly the Brahman class in a village that carry out these instructions in detail, and as a result, you will find them, as a rule, compare favourably with the lay portion of the community as regards their outward form and constitution. A hoary headed venerable patriarch, conducting a *tole* or a sanscrit school of education and commanding respect of the whole neighbourhood, is a common phenomenon in a village, and the name of *ब्रह्मचारी* has become synonymous in our society with the ignorant priest who thrives and fattens in the discharge of his vocation. Even the widows, who groan under the inflictions of social torture and domestic bereavements, but who are forced to comply with the routine duties of society, are more tenacious of vitality than their more fortunate sisters, and are generally supposed to enjoy longer life. I do not advocate, however, the adoption of the old system of living in the present generation in its entirety. Society must keep pace with the times, and conservatism is to be deprecated when adhered to at the expense of comfort and progress.

I hope I have succeeded in demonstrating the utility of Hygiene, or the science which relates to the preservation of health. To be on our guard against the inroads of disease, it is necessary for us to know the general causes and modes of their dissemination. Diseases may be generally said to arise from causes which are either internal or external to our body. Under the first class may be grouped those that are called constitutional, as arising

from some hereditary defects in our constitution, or acquired by malassimilation of food, or from perversion of the natural secretions of the body. Most of them, although implanted within us from our birth, are still in a great measure amenable to hygienic laws. Thus scrofula, which is a fruitful cause of consumption, may remain in abeyance if the individual is liberally fed and breathes the pure and wholesome air of the seaside. Hereditary syphilis, in which the sins of the father are visited on the child, makes its destructive havoc amongst the tender recipients when their vitality is lowered by unhygienic conditions. Gout and rheumatism are a penalty which a person pays for epicurism when he takes more food than he can assimilate or nature demands. Pyæmia or surgical fever, which is the dread of every surgical hospital, and which arises from absorption of putrid matter into the blood, can be eradicated by scrupulous attention to cleanliness.

It is with the second class of diseases, however, with which we are more concerned, and most of which would come under the category of avoidable. Their causes exist either in the air we breathe, in the water we drink, or in the food we eat. If it were possible to ensure the purity of these three great vehicles, we could reduce our chance of disease to a minimum. It is necessary for all these causes to enter the blood through the channels of respiration or digestion to set up their deleterious influence. These causes are,—First: Liquid specific animal poison;—Second: Gaseous, organic or inorganic poison or impurities;—Third: Organic, inorganic or mechanical impurities.

First: Instances of this class are to be met with in all contagious diseases that are directly communicable from man to man through the medium of the blood. This is not however the way by which they are generally introduced into our system. Small pox, scarlat fever, measles, diphtheria, although directly inoculable, get their access into the blood through the medium of the air. Their specific poisons exist in their secretions. It should be premised, that the air is not the subtle transparent medium which we observe with the naked eye. It contains numerous floating particles generally called dust. We shall refer hereafter to this dust, but suffice it for the present to say that these liquid poisons dry up and are wafted in the

atmosphere in a state of minute subdivision. Thus the air remains pregnant with the germs of disease which have such affinity for the human constitution that they seek out a susceptible soil on which they may 'light and multiply. In this way is explained the spread of contagious diseases, and if the air and the season are peculiarly favourable to their generation, a wide-spread epidemic is the result. Thus all these contagious diseases own a pre-existing germ without which they could not come to life. The question of spontaneous generation still remains an unsettled and disputed point, but if we admit that the very lowest organism cannot come into existence without a parent, *a fortiori*, higher organisms, potent for such wide-spread mischief, must own a similar origin. Otherwise what safety is their for human lives if these destructive agents can be produced out of nought? Life would then be at the mercy of mere chance, and providence would be a mockery. Granted, therefore, the existence of a previous germ, the next requisite is season when it may grow. Every vegetable seed requires a certain season to germinate. Its cells then come into activity and multiply upwards and downwards as offshoots for imbibing nourishment from the soil and the air. These nourishments always exist at all times of the year, but yet the plants cannot thrive when sown out of season. Either they do not germinate at all or die after a temporary activity. What that seasonal influence is, we are unable to say; this much is certain that the influence of spring sets into activity the germs of some plants, and of winter of others. Exactly the same thing happens with the germs of diseases. It is in certain seasons and climate only that their activity is manifest. When imported or implanted in an uncongenial climate or at an unseasonal period, either they are blasted in the bud or withered for want of the proper stimulus. Thus scarlet and typhus fevers are peculiar to cold climates, and though solitary instances of importation in India have been recorded, they have not been able here to make a head. Yellow fever of the West Indies cannot exist in colder latitudes, and one way of cutting short its prevalence when it makes its appearance in a vessel is to run her beyond the latitude of 48° where it dies out of itself. Small pox is very destructive in the months of April and May, but in other seasons, it dies out with individual instances,

and show no tendency to spread. It is then that the outbreak is sporadic. The nature of this seasonal influence is yet an enigma, nevertheless it does exist and its effect is heightened by surrounding unhygienic conditions. Given therefore the germ of disease, and the favourable season for its germination, another factor is requisite for its manifestation, viz., the soil, in which it must implant itself and from which draw its nourishment to be able to multiply. Just as a grain of mustard seed will produce thousands of its kind, so a particle or a molecule of the poison will propagate numbers of its kind, the limit to its spread being determined by the change of season and the exhaustion of the soil. Now what is this soil, that we have been alluding to? It is nothing more than the human constitution for which the germ has a great affinity. The weaker the constitution, the better adapted it is for the reception of the germ. Besides, most of these poisons exhaust the soil after one manifestation, and in subsequent attacks either they are powerless or show diminished activity. Hence small pox, scarlatina, syphilis, typhus fever, &c., have a tendency to appear but once in the life-time of an individual, and one attack is said to afford immunity from future attacks. To obtain this immunity, it had been the custom to anticipate the disease and induce it artificially in the system, but unfortunately the disease so introduced runs its course with relentless severity and offers no advantage to the hospitable host. Hence inasmuch as to court disease in such instances is to court death, the practice has never found much of advocacy. Inoculation of small pox and scarlatina is nowadays nearly abandoned, and if vaccination had not been discovered as a substitute for inoculation of small pox, the latter would have continued its terrible havoc all over the surface of the earth. In vaccination we have got an efficient and safe preventive, and who can say what success awaits us in the womb of futurity with reference to similar antidotes being discovered for the remaining dreaded diseases?

Now let us see in what way sanitation comes to our help in preventing the spread of contagious diseases. Isolation and segregation of patients beyond the confines of towns, limit the chance of contagion. Free ventilation of the room in which the patient is nursed, dilutes the germ and weakens its potency. General attention to cleanliness stints the supply of fuel to the

fire, for it is in dirty nooks and corners that the poison delights to revel. Besides, as in small pox, the previous protection of the system by vaccination exhausts the soil and stamps out its prevalence. And finally destruction of the germ contained in the secretions and taken up by the wearing apparel by means of fire or deoxidisers would still more reduce its activity. If in defiance of such measures or the impracticability of their being carried out to perfection, the disease still gains ground, we cannot do better than follow the advice of the poet, 'since it is hard to combat learn to fly.' By removing the susceptible individuals from its sphere, you starve out your enemy and compel him to beat a retreat.

The second class of causes consists of gaseous organic or inorganic poison or impurities. Of the gaseous organic poisons, malaria holds the foremost place. It has not been isolated like the liquid animal poisons before described, but its presence, like air, is manifested by its effects. It differs from the 1st class in being the product of the earth, and not requiring the human soil for its development. Whilst small pox and measles cannot exist by themselves in the wilderness, malaria abounds and exercises its deadly influence in the most solitary jungles. One is a disease specially of society, the other avoids the haunts of men. Whilst one is *sui generis* and requires a parent for its growth, the other can multiply ad infinitum out of its parent earth if it contains the materials for its development. One is elaborated out of vitality and like animal life retains its vitality only for a certain length of time, the other is the product of inert soil elaborated by some hitherto unknown chemical or dynamical influence, and once produced will show its activity for an indefinite length of time, and in consequence of its wide diffusion in the air, has not been yet isolated as a separate entity. One multiplies itself in the human system, the other can only affect it when brought under its influence, but cannot grow in the body or generate its kind. Hence, whilst one case of small pox will give rise to hundreds, and in favourable seasons produce an epidemic; one case of malaria will die out in the individual and cannot find a favourable reception in a distant locality, and spread unless the evolution from the soil vitiates the surrounding atmosphere and carries its pernicious influence beyond its place of origin. Their

modes of origin being distinct, their spread and prevention are also different in principle. Thus unlike animal poisons malaria shows itself on the spot and can only affect the health of towns in its immediate neighbourhood within the radius of a mile or two. Beyond that limit it gets so diluted with air, that it becomes almost innocuous, and since it cannot multiply out of its elements it dies out. The contagious diseases on the other hand are wide spread, and within a short time will affect a district or a country, and as quickly die out either with the change of season or exhaustion of the soil.

Many object to the term malaria as being vague and misleading, but I am conservative enough to adhere to the old nomenclature as long as the exact nature of the deleterious agent is not fully brought to light. It simply designates an entity and signifies 'bad air,' which, for ought we know, may be a product of a certain chemical composition, but in the absence of a more correct knowledge, the term malaria will help us in our argument as an assumed hypothetical existence. It has been empirically ascertained that this so called malaria is always associated with soil surcharged with decomposing vegetable substance. Heat and moisture favour this decomposition, and wherever these three factors exist, the presence of malaria has been found to be so constant that they have been associated in the light of cause and effect. In fact, all the foregoing conditions supplied, the production of malaria can be predicted with as much certainty as the production of any substance of known composition.

The climate of Bengal is noted for malaria and the alluvial soil of the country offers a rich and fertile field for its generation. Some of the districts of Lower Bengal have been almost depopulated by this deadly pestilence, and I need offer no apology for taking this opportunity to explain its *modus operandi* and its treacherous mode of aggression. I have already pointed out that malaria is the product of an unhealthy change in the soil developed from vegetable decomposition. In fact it is putrefaction on an extensive scale. Now, let us see what happens when this decomposing change is set up in a vegetable substance under our immediate observation. Heat and moisture set up a destructive process. A small speck of blackness is formed at one spot, from that focus it extends circumferentially till the whole mass is affected.

If that putrid substance remains in contact with other sound vegetable substances it sets up its own destructive change in them, and hastens their decay. This contagion of putrefaction, so to speak, spreads to its immediate neighbourhood by contiguity. Every housewife knows that the best way of preserving a heap of potatoes from rot, is to weed out the diseased ones, so that their contact may not contaminate the rest. Allied to the process of putrefaction is fermentation. In truth both are identical in their nature, being the dissolution of the complex organic constituents into some other stable compound. Fermentation therefore is nothing more than putrefaction of a solution of sugar in which alcohol, carbonic acid and water are the resulting products of change. Like putrefaction it destroys the whole mass if once the process of change is set up in a few molecules of the solution. The same thing exactly happens when vegetable decomposition goes on in the soil, and the process will explain the gradual inroads of the malarious fevers in the districts of Hooghly and Burdwan, the causation of which has puzzled the profession and the public at large. The alluvial soil of Bengal always contains materials for the generation of this poisonous agent when acted upon by heat and moisture. The supply of the latter being limited in particular seasons, the change takes place only periodically, and hence malarious fever is endemic all over Bengal just after the close of the rains when saturation of the soil is at its maximum point. The greater the moisture in a vegetable mass, the more rapid is the decomposition. Malarious fevers are more intensified* in seasons attended with unusual heavy fall of rain. Besides this seasonal rain-fall, various other causes may contribute to keep the soil water-logged. Want of a system of drainage to carry away the surplus water into a running channel, will cause the water to sink into the soil and impregnate it with moisture. Obstruction of the regular drainage channels by natural or artificial processes will produce the same mischievous effect. Any natural system of drainage cannot be trusted long without the chance of an impediment to the outlet occurring at some distant period, and as the population multiply and filth accumulates, human interference is needed to preserve it. Otherwise it is sure to deteriorate and make its unhealthiness felt with a sudden outburst of disease. Even that great

sanatarium Simla had to pay dearly the penalty for this neglect of sanitary measures. Various natural or artificial causes tend to produce impediment to drainage in the Bengal villages. Bunding up the water in large patches of land as in tanks or in rice fields, or a dam thrown across the drainage channel of a country, will determine the moisture to the ground. These causes have been in operation for some time past till their combined action resulted in putrefaction in a limited patch of ground and the production of a virulent form of malarious fever. The influence of this putrefaction was conveyed to the adjacent soil, which, in turn, got affected and similarly communicated it to its neighbour. Thus, in a series of years, village after village was absorbed in the vortex of disease, the spread being in a direction from south-east to north-west, which, be it remarked, is the slope of the district in the reverse way as indicated by the course of the natural streams. Commencing at a lower point of the slope, the change has progressed higher up to meet with a final barrier at a higher altitude where moisture cannot conveniently settle. The slowness of progress of the disease towards Bancurah and Beerbhoom, makes us sanguine that ere long the barrier would be reached and its effect confined within that limit. The association of malaria with vegetable matter in the soil in a state of decay is not a new theory but was known to the ancients from the time of Hippocrates. Medical Science abounds in facts which show that abstraction of moisture from the soil by means of efficient drainage has stopped the generation of malaria and changed the aspect of a country. Even the planting of the *Eucalyptus globulus*, a plant, which by its large cellular interstices absorbs a large quantity of moisture from the soil and expose it to the sun, has been found to be so far effective as to stop the evolution of malaria.

I have given prominence to three factors for the generation of this poisonous agent, viz., vegetable matter in the earth, heat, and moisture. Any two will be powerless to operate without the co-operation of the third. Now, how does hygiene help us to extricate ourselves from the grasp of this unwelcome visitor? We cannot change the constituents of the soil nor can we counteract the heat, but we have power to regulate the moisture of the earth. By cutting out drains superficial and

underground, we can remove the drainage far away into a channel whence it will be emptied into a running stream. By removing the natural or artificial obstructions to water courses, we favour the dryness of soil, and by reducing the number of tanks in a village we aim at limiting the process of putrefaction by limiting the supply of moisture. Still one condition remains in operation—the rice fields which we cannot conveniently dispense with. They are all so many marshes, and must necessarily continue to contribute their quota of disease, though its virulence will no doubt be much diminished by the improved sanitary measures before described. Much ridicule has been hurled against the attempt to exterminate jungles from villages. And it is said, that this has not been attended with any marked benefit. But who would deny that rank vegetation adds fuel to the fire, and feeds the already charged soil with vegetable matter and thus heighten the mischief? In the whole range of my experience in Burdwan I did not find one village that suffered less from fever where jungles were found in abundance, whilst I can bring forward many instances of comparatively less suffering where the soil was not overgrown with rank vegetation. Indeed the latter is nothing more than an indication of a saturated condition of the ground, and their co-existence serves to keep up a circle of vicious change. To try to keep down therefore the exuberant vegetation will not be without its proportionate advantage.

I have pointed out several causes that have helped to increase the moisture of the ground. Most of them have been in operation for some time past, and some of them have increased of late. Whilst admitting the mischievous influence of impediments caused by artificial embankments and new roads, I cannot admit that the cause is universally operative in the villages of Burdwan and Hooghly, wherever fever has been found to exist. No doubt it is one of the potent causes, but it is not the sole cause as its advocates have tried dogmatically to put forth. It is a known fact that malaria is more powerful at night than at day time, and the rationale of it is easy to understand. In that season of the year when its evolution from the soil is greatest, viz., in September and October, the nights are cool and the air remains charged with moisture. After day light, the radiation of heat begins to take place from the surface of the earth. The stratum of air in

immediate contact with it falls in temperature, its aqueous vapour becomes condensed into dew which settles thick on the grass and all low vegetations. This condensed air on account of its high specific gravity envelopes the face of the earth like a curtain and has no tendency to expansion. Its influence reaches up to a certain height. All of us, I dare say, have observed in the winter months the smoky atmosphere of towns at night and at early dawn, which clears away when the genial ray of the sun instils heat and life into the animate and inanimate creation. In warm weather this smoke would have diffused itself high in the atmosphere and remained imperceptible, but in cold weather from inability to do so it remains bound down by heavy air above, and makes its presence felt. Observed from a height, the two strata of smoky and transparent air, will be found to be defined by a clear outline. Malaria, being the product of the soil, naturally finds its way into the air which is just in contact with it and cannot diffuse itself on account of the density of the medium in which it is contained. Hence, with its evolution, it becomes more and more concentrated, and towards morning its virulence is the greatest. The rising sun warms up the air, disperses and diffuses the malaria, and so dilutes it to the extent of rendering it innocuous. Hence, it is considered dangerous to expose oneself at night in a malarious climate, and the early morning air is always avoided as pestilential.

As a corollary to the foregoing, sanitation dictates the necessity of living in two storied houses in malarious districts, or at least to sleep at night on raised earthen floors, on a platform or even a khuttia, to avoid the influence of this deadly agent. Amidst the sad desolation of fever in the district of Burdwan, it was a pleasing contrast to see a few patch of villages suffer less from its mischievous effect, and strange enough, they were those that were regularly swamped by the inundation of the Damooda and bore the full brunt of the impetuous current. The solution of the phenomenon was long to me a mystery, until the peculiar manner of construction of the huts gave me some clue to the cause of this comparative freedom. To protect themselves from being washed away by the current, the inhabitants raise the basement of their houses, from 15 to 30 feet high from the general level by the addition of heaps of earth, so that when the

whole country remains under water, these huts keep out like so many floating villas between which communication is kept up by the inhabitants by means of boats. To this elevated site where malaria cannot easily diffuse itself, I ascribe the immunity which these people enjoyed from the general fate of their otherwise fortunate neighbours.

Besides malaria, other gaseous organic impurities may exist in the air, such as carbonic acid, sulphuretted hydrogen, ammonia, &c., which are generally the result of overcrowding or decomposition of vegetable or animal substances allowed to collect and rot in cesspools and pits. Breathing in impure air lays the foundation of a large number of diseases that flesh is heir to. Consumption, which counts its victims by hundreds in cold countries, is the result of breathing the pent up air of close and ill ventilated rooms. The outbreak of typhus fever has often occurred in ships that are badly constructed for ventilation. Sulphuretted hydrogen gives rise to symptoms analogous to cholera. In manufacturing towns, other gases are produced, as the result of combustion in furnaces or the reduction of ores, and the fumes of phosphorus in lucifer-making establishments, and of lead from the smelting of the metal, give rise to necrosis of the jaw and lead palsy. The latter are the penalty that society pays for civilization, and their evil effect is minimised by various contrivances that human ingenuity can devise.

The third class of diseases arise from solid organic, inorganic or mechanical impurities. These exist either in the air, water or food. Solid organic impurities in the air are those particles of animal poison that dry up and are wafted along with the breeze, or those parasitic fungi that settle themselves on the dirty skin and produce various obstinate skin diseases. Besides their introduction through the organs of respiration, there is another way in which they may find their access into the human system. In a close room surcharged with the germs of disease, the latter may get into the mouth and mixing with the saliva may be unconsciously swallowed, and in the stomach they find their way into the blood and make themselves manifest. Cholera is not directly communicable through the medium of the respiration. The immunity, which the nurses, students and other attendants of cholera patients enjoy from the contagion, has incontestably

shown the feeble tendency of cholera to disseminate itself through the air. It is when swallowed that the poison proves potent for mischief. It points to the necessity of free ventilation in the rooms where cholera patients are kept, and in attending upon or nursing cholera patients we should do well to follow the wise proverb of giving every man our ear, but few our tongue. The less we open our lips in a close room, the greater is our safety, and we must take care to rinse our mouth thoroughly before we swallow our spittle.

The mechanical impurities in the air are what goes by the name of dust, which consists of small solid particles generally wafted from the ground, and which must vary in its nature with the locality. In the vicinities, for instance, of coal mines, needle factories, stone cutting establishments, &c., the dusts raised are minute particles of coal, steel, stone, &c., that have sharp points or edges. These when inhaled lodge themselves in the lungs, and by constant irritation produce ulceration even unto phthisis.

The specific poisons of cholera, typhoid fever, &c., may find their way into water by percolation through the soil or by direct admixture. Other organic impurities may be derived from decayed vegetable or animal matter, or from of the sewage of towns. These impurities, although not always detectable by the taste, impart poisonous qualities to it, and produce mischievous effect. Diarrhœa is a very constant effect of drinking impure water, whilst the poisons of cholera and typhoid fever produce their special symptoms in the system.

The inorganic impurities may vary with the nature of the soil. Water is called hard or soft according as it contains earthy minerals in larger or smaller proportions. A nitrous soil will impart nitre, a chalky soil will impregnate it with lime. Goitre, the stone, cretinism, the Delhi boil, &c., have been traced to water surcharged with mineral substances.

The mechanical impurities of water consist of dust, sand, particles of mica, &c., that may remain in mechanical suspension in it. During the rains, the water is turbid with such mechanical impurities, and mere rest in a vessel is all that is necessary for their settlement. The turbid water mechanically irritates the bowels and produces diarrhœa, and the obstinate diarrhœa of the hills is traceable to particles of mica.

Impurities conveyed by means of food are of a different nature. Food in a state of decomposition always proves unwholesome, however palatable it may be to the taste of some. Habitual use of diseased grains will give rise to progressive palsy. The succulent vegetables that are eaten in a raw state often lodge ova of worms, and unless thoroughly washed before eating, breed those parasitic animals in the system. Meat should always be well cooked to prevent the introduction of the tapeworm into the bowels. For the proper nourishment of the body, all the different constituents of food should be taken in regular proportion, excess or deficiency in one will lower the vitality of the tissue which derives its support therefrom. Food is very likely to be contaminated with organic poisons that find their way accidentally through various sources. In India, where the petty dealer lives with his family in one room huddled up with his stores, it is easy to conceive how a disease like cholera breaking out in his family will poison the provisions and convey, through their agency, the disease to distant parts. One wholesome rule in cholera seasons that I should impress, is to get the supply of provisions from a locality where the disease has not shown itself, and to be particularly strict about the purity of our water supply. It is not sufficient that the drinking water alone is pure, but likewise that which is used for cooking, washing the plates, and for all other domestic purposes. Milk has often proved a fruitful vehicle of disease in consequence of its adulteration with impure water. Until we are in a position to guarantee the perfect purity of all the articles of our diet, liquid or solid, it will be foolish to try to controvert the theory of the propagation and spread of cholera by ingestion of the poison in our stomachs. For, besides one mode of its introduction through water, there are hundred other ways which may betray our system, and which are too apt to be overlooked.

Thus the causes of diseases or the modes by which they invade the human constitution, being known, I dare say, many of us would be able to avoid or prevent them by adopting precautionary measures. If, to know a disease is half the cure, to know its cause, I should say, offers half as much chance of escape. Of course, it is impossible to be particular at every step in life, for danger may lurk where we least suspect it, still that

is no excuse for the neglect of a duty which every one owes to himself and to his neighbour. That man will surely have to repent who, with a blind faith in the mysterious working of nature and in predestination, leaves everything to chance. Knowing that many of our diseases have already become amenable to our control it should be our aim to minimise human suffering. It may be urged that a knowledge of the causes of disease will make us nervous and always apprehensive, and life will be deprived of its enjoyment if we are constantly on the look-out for imaginary evils in the air, water or food. Those who would prefer to live according to the proverb 'whilst ignorance is bliss, it is folly to be wise,' would have to repent when they pay the penalty of their ignorance by meeting with an untimely end.

REVIEW.

Essays on Medicine: Being an Investigation of Homœopathy and other Medical Systems. By William Sharp, M. D., F. R. S., &c., &c. The Tenth Edition. London. Henry Turner and Co. 1874.

Essays XXVI-XXXII. (1875-1877.)

(Continued from p. 376.)

Dr. Sharp looks upon the symptoms of diseases and the symptoms of drugs as "the outside links of a chain of causes between which there are several unknown links." He claims to have discovered these intermediate links, and thinks that thereby he has raised homœopathy from the position of a mere empirical formula into the dignity of an inductive law. He does not repudiate homœopathy. On the contrary he affirms that "the principle of the founder of homœopathy, when limited as has been pointed out, remains in all its vigour. The comparison between the symptoms produced by large doses of drugs in health, and the symptoms presented to our observation in disease—all that Hahnemann meant to express by the phrase *similia similibus curantur*, or by the word homœopathy, steadily abides."

The intermediate links are 1. the identity of the *seat* of action of drugs and diseases, 2. the identity of the *kind* of action of drugs and diseases, 3. the opposite actions of large and small doses.

The question of dose is undeniably the most perplexing in the new school. Not only no definite conclusion has been arrived at regarding it, but all the conclusions that have been arrived at by homœopathic physicians from Hahnemann downwards afford a signal illustration of the inevitable failure which must be the necessary reward of all endeavours to arrive at the truth except by the right methods. Dr. Sharp is perfectly justified in saying that "the question of dose is lost in the same dark labyrinth in the new school of medicine, that the question of remedy is in the old school." The action of small doses is to be discovered by the same method by which the action of larger doses is determined, namely by experiments on health, and not by experiments on disease. Dr. Sharp is surprised that Hahnemann and his followers should not have thought of the new course, but should have been beguiled into following again the old course, in their endeavours to discover the rules for the doses. The fact appears

to us to be that neither Hahnemann nor any of his followers did at all suspect that there was any distinction between the actions of large and small doses of medicines. And Dr. Sharp states a simple fact when he says that "the action of small doses, as distinct from that of large ones, has not been studied by separate provings of them in health." He has therefore done a signal service to the new therapeutics by recommending this study, not only by "showing its necessity but by beginning to do it."

In order to determine the action of small doses, Dr. Sharp instituted a series of experiments with *aconite*, *digitalis*, *phosphorus*, *spigelia*, *opium*, *veratrum*, *mercury*, *tartar emetic*. We give as a sample his experiments with *aconite*, and his observations on the action of its small and large doses :—

Aconite seems to have at least four different kinds of action upon the heart, which are dependent upon the dose.

First action. A dose of one or of two drops of the first centesimal dilution first quickens the heart's action for a short time (one, two, or three minutes), then retards it.

e.g. Oct. 19, 1872, one or two drops of this tincture taken in separate experiments, when the pulse was 80, in one minute raised it to 82, in two minutes to 84 or 86, then, after the third minute, it fell to 82, and after the fourth minute to 78 or 76.

Second action. One or two drops of the sap of the plant (two or four drops of the "mother tincture"), quickens the heart's action, and no retardation follows.

e.g. Dec. 3, 1872, my pulse at 72 was raised in three minutes to 75, in five minutes to 78; it fell in ten minutes to 76, in fifteen minutes to 73, and in twenty minutes from the commencement of the experiment to 72, at which it remained.

Third action. We know from many published cases that larger doses than these (several, or many drops of the tincture), first depress the heart's action for a short time, then quicken it very much.

Fourth action. From similar sources we learn that still larger doses (some solid portions of the plant itself), destroy life during the first depressing action. Mr. Gordon, of Dingwall, died in this manner.

These four kinds of action of *aconite* may be reduced to two, in their tendencies. First, the action of small doses; the tendency of these is to quicken and then to retard the pulse. Second, the action of larger doses; the tendency of these is to retard or depress, and then to quicken the heart's beats. When the experiments fail to produce these consecutive effects there is some impediment in the way.

Aconite, then, in small doses, quickens the heart's action for a brief period before it retards it. This has probably been observed for the first time. The observation surprised me.

It very soon makes the pulse slower. This we are all familiar with in the use of aconite as a remedy in inflammatory fever. I lately saw a pulse of 130 brought down to 40 in about three days, by repeated doses of this first dilution of aconite.

The range of these small doses having this action on me lies between the first dilution and the one-fifth part of a drop of the mother tincture : that is, from the hundredth to the tenth part of a drop of the sap. It is probable that in others it may lie between this tenth part and a whole drop.

Of all these varied actions of aconite upon the heart the only truly curative influence is the second action of the small dose. It follows that the only legitimate use of aconite is in doses which produce this retarded motion of the heart.*

* After perusing the author's essay on the actions of the small dose we instituted some provings with small doses of aconite, the variations in the pulse being chiefly noticed. The results of the two first provings, as will be seen, corroborate the author's statements. To the second prover probably the 3rd Dec. dil. was a large dose.*

Tuesday, the 17th March 1874, 10 p. m.	10-57—67.	
1st Prover. Normal Pulse 64.	11—68.	Dryness less. Numbness almost none. Thirst also less.
10-7.—3 drops Aco. 3 Decimal.		
10-8—71.	11-3—66.	
10-10—70.	11-6—68.	Dryness now in the posterior part of the tongue ; no more in the anterior part as before.
10-12—68.		
10-13—68.		
10-15—66.		
10-16—64. Sigh.	11-8—68.	Thirst again.
10-18—68. Dryness of tip of tongue with or rather preceded by numbness (slight). Thirst.	11-10—66.	
	11-15—66.	
	11-17—67.	Other symptoms almost nil.
10-20—64. Sigh.	11-28—67.	
10-21—66.		
10-22—66.	Saturday the 11th April, 1874.	
10-23—66.	10-20 p. m. Pulse 64. (Same prover.)	
10-25—70. Dryness continues ; no more numbness but some roughness. Thirstless.	10-27	One drop.
	10-30—70.	
10-27—66.	10-33—70.	
10-30—68.	10-35—70.	
10-32—67.	10-37—70.	
10-35—69. No more dryness. Thirst almost none.	10-41—70.	
	10-44—70.	
10-38—68.	10-46—70.	
10-39—69.	10-48—70.	
10-43—67.	10-50—66.	
10-44—67.	10-53—68.	
10-46	10-58—68.	
10-47—72.	11-1—	One drop.
10-49—70.	11-4—70.	
10-50—67.	11-6—68.	
10-52—67.	11-8—72.	
10-55—66. Dryness again preceded by numbness ; dryness more marked.	11-11—66.	
	11-14—66.	
	11-16—70.	
	11-21—68.	

In this way he goes on with the rest of the drugs mentioned above, and thus summarises the results obtained with small doses relative to the pulse and the respiration :—

The Pulse.

Aconite first quickens, then retards the pulse.

Digitalis reverses this order. *

Phosphorus acts as aconite does.

Spigelia reverses this also.

Bovista acts too slightly to detect any order.

Lead does the same.

Oleander first quickens the pulse.

The Respiration.

Spigelia reduced the breathings from 17 to 6.

Bovista raised them from 17 to 22.

Lead first depressed them from 18 to 15, then raised them to 20. A second dose reduced them to 11, then quickened them to 23.

Oleander first quickened, then lowered them, reversing the action of lead.

He, then, from a survey of the actions of large and of small doses, draws the following general conclusions or inductions :—

1. The kind of action of drugs varies with the dose.
2. This variation, in a certain range of large doses, amounts to opposition to the kind of action of another range of small doses.
3. The directions of the range of large doses is the same as that of the diseases for which, in small doses, they are remedies.
4. The direction of the range of small doses is in opposition to that of the diseases which they cure.
5. This opposite tendency is shown in health. Its cause, therefore, is not a difference in the state of the organ arising from disease, but in the quantity of the drug.
6. The varying conditions of disease have their influence on the action of drugs, but the effects of this influence are not at present under investigation.

11th April, 1874. 2nd Prover.		10-56—76.	
10-20	Pulse 80.	11—75.	
10-28	One drop Aco. 3.	11-1.	One drop.
10-32—78.		11-3—76.	
10-34—76.		11-5—72.	
10-36—74.		11-7—72.	
10-40—80.	Stronger and fuller.	11-10—76.	
10-43—78.		11-13—78.	
10-45—76.		11-15—78.	
10-47—74.		11-17—76.	
10-49—75.		11-20—76.	
10-51—77.		11-22—76.	
10-54—74.		11-24—76.	

In another place he says :—

The various doses of a drug, as regards their kind of action, are separated into two portions *by a dividing line*.

The doses above the line—the larger doses—have a kind of action which is in the opposite direction to that of those below the line—the smaller doses.

The action of the doses above the line is *injurious*, while that of those below it is *curative*.

Dr. Sharp then considers the bearings of these results upon our position as homœopathists. He has already, it will be remembered, limited the law of homœopathy to the action of drugs. After years of research and reflexion he now thinks it his duty to point out another limitation, and that is “to the action of comparatively *large doses* of drugs.” “Taken in this restricted sense—restricted not only to drugs, but to large doses of drugs, and to their action in health—the law or rule, we may venture to say, is irrefragable. It is a natural truth. But,” continues he, “it is a half truth.” And this, in his opinion, “is another reason why it has not met with acceptance.” The action of small doses in the opposite direction to the action of large doses, he announces as the other half truth, and these two half truths put together constitute the whole truth of therapeutics. In other words “the law of Hahnemann, *similia similibus curantur*, remains true when limited to large doses ; and the law of Galen, *contraria contrariis curantur*, is true when limited to the action of small doses ; not true in Galen’s sense, nor in any former sense put upon the phrase, but in a new sense, a sense which expresses a fact, and not a speculation.”

A law for the dose is obvious, and is thus expressed :—

When a drug is prescribed as a remedy for a diseased organ, upon which it acts when taken in health, and for the kind of diseased action which, in certain large doses, it can produce in health, the dose must be small enough to be within the range of an action in the opposite direction.

For example—doses of *aconite* above a certain quantity cause a feverish pulse ; doses below this certain quantity retard the pulse. The larger doses are injurious, the smaller are curative. Only the latter should be prescribed as remedies.

And so it is with every drug. It is simply a matter of experiment in health to find out for each drug the dividing line above which its action is hurtful, and below which it is curative.

This, of course, will be a work of labour and care; but so is the proving of drugs at all; and so is the practice of medicine in any form. The advantage we have now gained is a clear perception of the work to be done, and how to do it.

Dr. Sharp proposes to call this contrary action of large and small doses *antipraxy*, meaning counter or contrary action, and devotes a whole essay (xxiv) to its consideration. The law of contrary action of different doses is a paradox, but not a contradiction. There is ample analogy in other departments of nature in support of it. These analogies are furnished by magnetism, chemical affinity, heat, electricity, light. In the centre of the magnetic bar of steel we have the analogue of the *dividing line* which separates the action of large and small doses. Again, one equivalent of manganese with one equivalent of oxygen forms a salt-making base, an oxide which combines with acids to form salts; with three equivalents of oxygen forms an *acid*, which combines with alkalis to form salts. A certain amount of heat causes certain elements to combine; a larger amount causes their separation when in combination. A current of a certain intensity of electricity passed through water decomposes it into its elements, whereas a current of stronger intensity causes the union of these elements into water. Two rays of light with vibrations of equal lengths unite to form a stronger beam, and if their vibrations are of different lengths they produce darkness. Again, as in other departments of nature so in drug-action the dividing-line is not always necessarily sharply defined.

Objection has been taken to this law of the contrary action of large and small doses on the ground that some drugs such as silica, carbon, and chalk manifest their health-disturbing action only in small doses. Dr. Sharp very rightly observes that the doses at which these drugs act perturbatively on health are to be taken as *their* large doses, and still smaller doses must be proved in order to ascertain if the law in question extends to them or not.

The system of therapeutics which employs smaller doses as remedies of diseases similar to those produced by large doses, Dr. Sharp proposes to call *antipathy*, and devotes essay (xxv) to showing what it is and what it is not. Homeopathy is based upon

the qualitative provings of drugs; antipathy is based upon their quantitative provings. The one leads us to the choice of the remedy; the other leads to the choice of the dose. "Antipathy is antipraxy applied to disease," with this limitation that "antipathy is the *small* dose of antipraxy given in sickness."—"The action in health is called antipractic; the same action in sickness is called antipathic." Thus though the action of the large dose is in opposite direction to that of the small dose, the former, according to Dr. Sharp, should not be used in disease. "It is the action of the small dose which is curative. The action of the large dose is injurious."

It is true that the maxim or formula of antipathy is expressed in the phrase, *contraria contrariis curantur*, but as already said, not in any of the senses that have been put upon it. Antipathy, for instance, is not hot against cold, dry against moist; does not consist in the use of antiphlogistics, of antispasmodics, of stimulants direct or indirect, of astringents against diarrhoea and of purgatives against constipation. Antipathy is not either the primary or secondary action of drugs, is not the reaction of the vital force against the action of drugs, and is not an explanation of the manner in which drugs act. Antipathy is not even a partner with homœopathy.

The discovery of antipraxy "gives the reason why the practice of homœopathy is so successful. It not only shows that homœopathy lies within the province of reason, but makes it one of the most reasonable things in the world." After this we do not see the necessity of the following paragraph, inasmuch as homœopathy as thus defined is identified with antipathy:

A reason can also be given for antipathy. The action of small doses being contrary to the action of larger doses in health, and these smaller doses being given for diseases similar to those produced by the larger ones, it follows necessarily that this action of small doses is contrary to the action going on in the disease for which they are given; this is the reason why they are often such successful remedies. That they do cure many diseases is manifest, and this is the reason why they cure. The natural action which they have in health is carried with them when they are given in disease. They take no cognizance of the condition of the organ which afflicts them, but having power to act in a certain direction, effects corresponding to the state of the organ is produced; if this state is a healthy one, disturbance takes place; if it is a diseased one, the same

action may bring about a cure. The experiments with belladonna on the iris are a visible proof of this ; and thus antipraxy answers the question why, whether asked of homœopathy or of antipathy.

In answering the objection that has been urged by the *British Journal of Homœopathy* against antipathy, namely that many diseases have no contraries, and hence this rule for the dose must be workable only in a narrow sphere, Dr. Sharp says that antipathy has not been brought forward as a rival or a substitute for homœopathy, and that in the sense now given to it, it "is not the contrary remedy, but the contrary dose." "A rule for the dose says nothing about the remedy." "Find the remedy first by the rule of *similia similibus curantur*, if you can, then antipraxy will help you to find the dose."

The concluding essay (xxvi) of the Volume has for its title, "organs have their own doses." As a further development of the various actions of different doses of drugs Dr. Sharp finds by some new experiments that "each organ as well as each drug has its own two ranges of doses." Of these experiments, only those with oxalic acid are given with some detail, and the conclusions from which are "that in doses of a tenth of a grain it acts on the stomach and bowels ; that in doses of the twentieth of a grain it acts on the heart ; that in doses of a hundredth of a grain its action is feeble and transitory." Of chamomilla nothing is said beyond "I have proved the first dilution (one hundredth of a drop of the sap of the plant) sufficiently to learn its action on the liver. On a healthy person its effect is to produce motions like those of a healthy baby ; it increases the secretion of healthy bile."

We have now to consider the essays which have appeared since the publication of the volume. These are six in number judging from the number 32 attached to the last. We are missing the 30th, the probability is we have not received it at all, and it is not to be found in the *Monthly Homœopathic Review*, in which the Essays of the author appeared. In these latter essays antipraxy receives further considerations, and the discovery of a new principle, *dipraxy*, announced for the first time.

Antipraxy is considered as furnishing a scientific principle for toxicology ; it is considered in respect of its limits ; and it is further illustrated and confirmed by some new experiments.

The suggestion that "small doses are antidotes to the injurious effects of larger doses" was first made in the Leamington Address (1873—*Essay axii*). Dr. Sharp now (1875—*Essay xxvii*) repeats it "not as a suggestion but as a consequence or deduction from the contrary action of different doses. It is given, not to form a new chapter in the science of toxicology, but to be the foundation of the science." He further speaks of it as a principle whereby the use of medicinal antidotes may be regulated, without of course excluding the *chemical* antidotes, or the mechanical measures which eject the poison. The principle, it is maintained, is not identical with isopathy, which consists in the use of the *products* of disease as remedies. The principle is neither identical nor inconsistent with homœopathy; the latter belonging to therapeutics, the medical treatment of disease; whereas the former belongs to toxicology, the antidoting of poisons. The principle is a deduction or corollary from antipraxy, and has to be verified.

To remove the objections urged against Antipraxy from a misconception of its meaning, or from an exaggeration of its extent, Dr. Sharp devotes *Essay xxviii* to a consideration of the boundary which limits it as a natural fact, and the boundary which we ought to draw around it from the imperfection of our present knowledge. The effects of topical action, strictly so called, namely the external effects produced by an agent in *contact* with the part acted upon; the phenomena of electricity, and other physical forces; and the phenomena of primary and secondary action of medicines;—are outside the limits of antipraxy as a natural fact. "Infinitesimal doses, as far as our present knowledge goes, may be outside the limits of antipraxy."

In *Essay xxxi* Dr. Sharp further illustrates antipraxy by some fresh provings of castor oil, of chamomilla, and of bayberry (*myrica cerifera*), and cases of cure based thereupon.

A scientific gentleman, unacquainted with homœopathy, took, at the request of Dr. Sharp, one grain, night and morning, of the 1st centesimal trituration of castor oil, without knowing what he was taking. At the end of three days, that is, after having taken six powders, there was complete confinement of the bowels, and as this made him uncomfortable and was giving him headache, he discontinued them. This was in April 1876. Dr. Sharp had diarrhea on the 7th September. *Pulsatilla, crotonum,*

camphor were taken to no effect. About four o'clock in the morning he began taking the castor oil powders (a grain of the 1st trituration in each). "After the first came the sure sign of relief: a little quiet sleep; after the second in an hour, more sleep; after the third, in another hour, a longer sleep. After the first powder no more disturbance of the bowels."

A gentleman in good health took on the night of the 28th April five drops of the mother tincture of *chamomilla*. "Half an hour after, rumbling in the stomach. Next morning less free evacuations; and this continued the same for four days afterwards; the colour *darker* than usual. Ten drops were again taken at night on May 14th. Half an hour afterwards rumbling in the stomach. 15th—Morning evacuations as usual in quantity but rather *darker*. No evacuation on the 16th. Evacuation very small in quantity on the 17th; slight indigestion during the day. From these provings Dr. Sharp thinks it evident that the actions of the hundredth part of a drop of *chamomilla* (which he had proved on himself and from which increased secretion of healthy bile had followed), and the actions of five or ten drops are, so far as the liver is concerned, in contrary directions. He then cites a case of diabetes evidently springing from liver disease, which was cured by the 1st centesimal dilution of *chamomilla*.

A friend of Dr. Sharp took a drop of the 1st dilution of *bayberry* night and morning, for seven or eight days, during which time his bowels were rather more active than usual, and colour of the excreta much lighter, i. e. of a lighter and brighter yellow than usual. This was contrary to the "loose, clay-colored stools, destitute of bile," reported by Dr. Hale as the effect of large doses. A case is then given of an old man of 79 who was in extreme condition and who was benefited by the 1st dilution of the drug. The prostration of his mind and body, the dropsy of his right leg, the loss of power of the sphincters are related, but nothing said of the condition of his liver. Dr. Sharp must doubtless have diagnosed disease of this organ, but we respectfully submit he should have given the symptoms by which he did so.

The actions of *single doses* on healthy persons are, as Dr. Sharp very justly says, a distinct branch of undertaking in connection

with provings, and to its consideration he has devoted his last Essay (xxxii). The drug experimented with was *Opium*.

On November 2nd 1876, Dr. Sharp took at 12 o'clock one drop of *tincture of opium* in a little water, and the result was the increase of the action of the heart at first by six beats in a minute and then for a considerable time by four beats. On the 4th Nov. at 7.25 A. M., feeling quite well, the pulse 68, he took five drops of *tincture of opium*, with the following effects:—

In 5|10|15|25|35|60|95|120|150|170|200|300|360| minutes.

Pulse beat . . 68|68|70|70|74|76|76| 76| 72| 68| 68| 68 68 times.

Here also the effect was increase of the action of the heart. He had a mind to take ten drops in a few days, but being laid aside by illness, a friend of his did this for him and sent the following note:—"6 P. M., just finished tea, pulse mean 72, took 10 drops of the *tincture*, and sat down to read. ●

Time	5	10	15	20	25	30	35	40	50	60	70	80	90	minutes.
Pulse	70	66	68	70	67	68	70	70	67	68	62*	60	58	

Time .	100	110	120	130	140	155	170	had supper	9.15
Pulse .	54	53	56	56	58	59	57		64

The only other effect noticed was drowsiness."

Here there was but one effect upon the heart, but instead of an increase, as in the previous experiments, there was a diminution, of its action. These experiments illustrate the opposite action of small and large doses. The following experiment shows that there are doses intermediate between these, the effect of which is to combine both these actions. The same friend of Dr. Sharp took on another occasion six drops of the *tincture of*

opium, his pulse being 54, at 12.30 p. m., with the following result :—

Time .	5	15	20	25	35	40	45	65	minutes.
Pulse .	54	54	57	58	54	52	52	54	

He dined after this, and the pulse rose to 64. Here there was increase of the heart's action followed by decrease. "This is a case," says Dr. Sharp, "of true primary and secondary action, or of double action from one dose."

Dr. Sharp then gives some old experiments with opium from a work entitled "*An Inquiry into the Nature and Properties of Opium.* By Samuel Crumpe, M. D., Member of the Royal Irish Academy, London. 1793." In one of these experiments Dr. Crumpe after "having breakfasted lightly at 9 in the morning, took at 12 one grain of *opium* diffused in a teaspoonful of warm water, his pulse beating 70 in a minute, the normal standard." There was no variation in the strength or fulness of the pulse; there was no drowsiness, or any similar affection, but the frequency of the pulse was affected as follows :—

In	2	5	10	15	20	25	30	35	40	45	50	55	60	minutes.
Pulse beat . .	70	74	76	76	74	74	74	72	72	70	70	70	70	

In another experiment Dr. Crumpe gave at 1 o'clock p. m. "to a robust healthy young man, whose pulse beat but 44 in a minute, its natural standard, one grain of *opium* in a small quantity of warm water. He had never before taken any of the medicine, and his pulse was affected in the following manner :—

In	5	10	15	20	25	30	35	40	45	50	minutes.
Pulse beat . .	44	44	44	44	50	52	54	48	48	46	

In	55	60	70	80	90	100	110	120	135	minutes.
Pulse beat . .	46	46	46	44	42	42	40	40	44	

"After twenty-five minutes had elapsed there was a manifest increase as well in the strength and fulness as in the frequency of the pulse. In an hour this began to diminish, and continued increasing till near the end of the experiment. A slight heaviness which came on fifty-five minutes after he had taken the *opium* was the only other effect experienced from it."

In a third experiment Dr. Crumpe took two and a half grains of *opium* dissolved in an ounce of water at forty-five minutes after 12 P. M.; his pulse, which was beating 70 in the minute, was affected as follows:—

In	5	10	15	20	25	30	35	40	45	50	55	60	75	90	minutes.
Pulse beat . .	74	74	74	76	78	80	72	70	64	64	66	70	70	70	

"In twenty minutes perceived a slight warmth, and soon after a degree of moisture on my skin, the fulness of pulse increasing as well as its frequency. In half an hour I found myself, or at least imagined myself, more alert and sprightly than before; in forty minutes perceived a pleasing kind of languor gradually increasing; in ninety minutes a dull headache; in two hours' time the headache was much increased, and attended with drowsiness and nausea; in two and a half hours every disagreeable symptom was increased, my pulse 70; took a spoonful of vinegar, which somewhat relieved the nausea; in two and three quarter hours found all the above symptoms still increasing, and attended with slight vertigo and tremors in my hands; pulse the same as before. In three and a half hours the nausea was considerably augmented, the other symptoms as before, and I at length threw up the contents of my stomach. The headache and vertigo were soon after relieved; but I continued in a stupid state for the remainder of the day."

In the first of these old experiments there was "one effect from one dose one of excitement, not followed by depression." In the second and third experiments there were "two effects, the second contrary to the first; manifest excitement followed by depression." Upon the brain there was "both the primary and secondary action, the double action from one dose."

To the contrary actions of the same dose Dr. Sharp gives the name of *Dipraxy*, which means double action. Dr. Sharp gives his readers distinctly to understand that the names *antipraxy* and *dipraxy* contain no explanation of the facts they express. He does not pretend to show *what* the action is, or *how* it works, and he considers it vain to feign conjectural speculations.

"All drugs," says Dr. Sharp, "which have been proved for this purpose, have an opposite action in smaller and larger doses; but it is not equally certain yet that all have intermediate doses with a double action. Some, as castor oil, may have middle doses with no action at all." In the double action of the intermediate doses, Dr. Sharp sees the connection between, or the key to the actions of different doses; and thus the dividing line, spoken of before, as separating the actions of larger and smaller doses, is now seen to be the connecting link between them.

Dr. Sharp here brings his labors to a close. He has been a student of medicine, he tells us, for fifty six years, and he has devoted himself to the study of Hahnemann's system for nearly the latter half of that period. So that in these *Essays* we have the ripest fruits of his ripest years. We have given a *resumé* of the results of his labors in, as nearly as possible, his own words. We shall give our own opinion on them in our next.

OURSELVES.

Apology for irregular appearance of the *Journal*, having been made, year after year, has lost its point. We therefore do not apologise. We merely state that we do not give up the self-imposed task. We feel that we owe a duty to homœopathy which forbids us to give up its advocacy. If homœopathy had been an abstract truth only, it might have been left to itself. But the very fact of its being a concrete fact of the highest importance to man as affecting his health and life, has made it tread upon the selfish interests of a profession which singularly enough, bearing the title of liberal, is the most illiberal in the world. Thus has homœopathy rendered itself liable to the

grossest misrepresentations. Its triumphs have indeed been very great, considering the time it has been in the field, but it has not yet succeeded in emerging from the atmosphere of polemic. And how could it, when members of the dominant school, while only too glad and ready to appropriate its treasures, are not only not ashamed to disavow the source whenever those treasures are obtained, but are not ashamed to continue in their attitude of opposition, nay, and cover the very name of homœopathy with their choicest abuses. Besides, being in its infancy it requires protection from degeneracy from within. Finding it immeasurably superior to the prevailing systems of medicine, the advocates of homœopathy have a great temptation of falling into exaggeration of its merits, and of despising whatever there might be of good elsewhere. Thus there is danger of arrest of its legitimate progress and reform, as well as of corruption of its doctrines. It is for this double purpose of guarding it from the attacks of the enemy without, and of keeping it free from corruption within, that there is still necessity for a Journal whose aim is the advancement of the healing art, and not the prosperity of any particular section of the profession. And this is our justification and our apology for continuing, in spite of all our shortcomings, in the field of journalism.

Acknowledgment.

The Materia Medica of the Hindus, Compiled from Sanskrit Medical Works.
By Uday Chand Dutt, Civil Medical Officer. With a Glossary of Indian Plants by George King, M. B., F. L. S., Superintendent, Royal Botanical Gardens, Calcutta, and the Author. Thacker Spink & Co. Calcutta. 1877.

Gleanings from Past and Contemporary Literature.**HOMŒOPATHY.**

By C. W. HUFELAND.

THE author has been completely misapprehended on the subject of homœopathy. It is, by the way, no uncommon thing in Germany to be misunderstood, but the author is surprised that such should have been his fate, as he imagined he had expressed himself distinctly enough. From many remarks that he has read and heard, he is forced to the conclusion that by many he is looked upon as nothing less than a follower and champion of homœopathy. Such is far from being the case, and this must be evident to any one who has attentively read what he has published on the subject.

This misapprehension, however, compels him to state openly his position in respect to homœopathy, and to mention what led him to take public notice of it.

The first thing that induced me was that I considered it wrong and unworthy of science to treat the new doctrine with ridicule and contempt. It is in my nature to lend a helping hand to the persecuted. Persecution and tyranny in scientific matters are especially repugnant to me; here we should meet with only liberty of thought, thorough investigation, rational refutation, mutual respect, and rigid adherence to the subject, but no personalities.

In addition, there was the esteem which for many years I have entertained for the discoverer, and which I owed him for his former writings and his important services to the medical art; and besides, the names of several estimable and unprejudiced men who testified to the truth of the system; I need only allude to the President Von Wolf of Warsaw, the Medical Councillor Rau of Giessen, and the Medical Councillor Widmann of Munich.

In the course of time I myself had opportunities of observing several cases successfully treated by the employment of homœopathic remedies, which must necessarily have drawn my attention to the subject, and convinced me that it should not be contemptuously thrust aside, but that it was worthy of a careful investigation.

Added to all this were my principles and my general mode of thinking in reference to the medical art.

"Prove all things; hold fast that which is good," is and will ever be the first commandment in all sciences, and in medicine especially. Have we not ourselves learned and made profitable use of many wholesome truths from the commonest sayings and remedies of the people, nay even from quackeries and errors?

Medicine is a science of experience; practice is a continued experiment performed upon human beings. And the experiment is not yet finished. If we have permitted the followers of Brown, and if we still allow the

partisans of contra-stimulation to administer opium and all other heroic medicines in monstrously *large* doses—why should we refuse permission to the homœopathist to administer them in monstrously *small* doses?

Liberty of thought, liberty of science—that is and must ever be our chief palladium, if we desire to advance. No kind of despotism, no autocracy, no coercion in matters of belief. In scientific matters the Government itself does not interfere, neither obstructing nor favouring exclusively one opinion; for as experience has taught, both these modes of dealing with matters of science are apt to do harm to the truth. It is only experimental investigation, argument and counter-argument, continued impartial research and time that can and assuredly will in the end separate the true from the false, the useful from the useless.

There are several ways of attaining the desired end, in medicine especially.—There is a slower, more difficult, more dangerous, and there is a quicker, a more certain, or a safer way. Nay more, methods of treatment apparently diametrically opposed may bring about the same result. The cause of this is the medium through which every thing takes place in the living organism, through which also the action of medicines is produced, the internal *vis medicatrix*, the *autocracy* and *autonomy* of living nature herself. Is it not a well ascertained matter of experience that burns may be cured equally well by cold water, as by heat and heating substances? And why? Because both influences produced, through the medium of the irritability and the vital process—the one in a direct, the other in an indirect manner, the one by withdrawing irritation, the other by over-irritation—the same result, the same alteration of the vitality, namely, a diminution of the vital action. And do we not daily see one person getting rid of his catarrhal fever by means of cooling remedies, and another by heating and sudorific medicines?

Nothing is on the whole more prejudicial to our art, nothing tends more to diminish general confidence in it, than a *public quarrel, the public expression of a mutual depreciation of one another by its professors.*—All who have the honour of the art at heart, must lament such open bickerings, and do all they can to prevent them. The public is only too much disposed to interest itself and to find amusement in them. Has it not already come to such a length that our discussions are paraded on the stage just as in the time of Molière. And do we not feel that just as the estimation of our art in general decreases, so every one, to whatever party he may belong, loses somewhat? I willingly admit that homœopathy, or rather its founder, was the first to give occasion to this state of things, by his complete rejection of all past medicine, and by the scorn and contempt with which he treated all that was not homœopathy. Still, are we thereby justified, and does it become us to answer in similar terms, or even to surpass our opponents in vituperation and abuse?—By no means.—On the contrary it becomes truth, and is indeed the most successful mode of combating, to conduct herself with earnestness and force, but at the same time with decency and dignity. Personal insults and ill-natured banter never advance the cause of truth;

they only excite angry emotions and bitter feelings, and instead of an investigation of the matter in dispute we have a personal quarrel. Of all things the most painful is, to see, as we have lately seen, the disputants having recourse to *retorts* and *recriminations*, thereby designedly displaying all defects. What advantage do we gain by shewing that deaths occur under every mode of treatment, a fact that no one doubts.

It may be permitted to an old man to look at things in a light different from that in which they are regarded by eager youth. One is placed in quite a peculiar position, when one has already lived through several ages of human life in the domain of science, and witnessed so many meteors arise, dazzle, and disappear; so many systems, each of which professed to be the sole true one, thoroughly exploded. How different does the world appear to such a one: how impressed he is with the vanity of all human things!—He learns to distinguish the real from the apparent, deception from truth, the transient, temporary, even in scientific matters, from the persistent and the eternal.—Fairness and consideration to those who think differently from us, a keen perception of the defective nature of all human knowledge, of our own amongst the rest, freedom of thought and elevation of the mind above the prejudices of the present moment,—such are the effects of a long life devoted to science; but chief among these effects is the consolatory conviction that science will continue ever to progress, that the rock of truth will remain firmly fixed even amid the most violent storms of error, that our very mistakes will only serve to bring about a better knowledge and a wider extension of the truth.

I look upon it as one of the greatest excellencies of old age, that it makes men free. In old age we stand as it were half above life; a number of the former worldly aspirations, motives and hindrances no longer affect us, and our judgment is free. We neither seek nor wish to become other than we are. What we are, we are in reality, all false appearances and deception, internal as well as external, have vanished, a long and busy life has fully decided their worthlessness. But the older I become, the more I feel penetrated with the truth of the saying: *Quantum est, quod nescimus!* I perceive even more and more, how much we do not know, indeed I account it one of the greatest advances of my knowledge to recognise *what I do not know*.

One word more. I consider it due to the confidence so long accorded me by the medical profession, to the post I have occupied for forty years as teacher of a large portion of that profession, whereon I ground my hopes of finding an attentive audience—to give expression to my thoughts upon this subject, respecting which such a variety of opinion prevails.

My desire and my object are to act as intermediary between the two contending parties, to subject the matter to a calm and impartial investigation, to separate the true and good in it from the false and the worthless, to introduce a tone of moderation, fairness and decorum into the controversy.

I made a declaration to the same effect in the *Journal für praktische Heilkunde*, in the year 1826.

I endeavoured to exhibit what homœopathy was and what it performed in a practical point of view, I endeavoured to display fairly its bad and its good points, I asserted that it could not be regarded as a universal system or principle of medicine, but only as a peculiar mode of treatment, and as such to be used rationally, that its main province was *to search for specific medicines*, in which it might be of great service, and I concluded with the words "Time will shew."

Since that time three years have elapsed. During this period a great number of trials have been made far and near, and the author has enjoyed opportunities of attentively observing many of them.

Commissions have been also appointed in Austria and Russia to ascertain the truth or falsehood of the matter. Nothing has as yet been published respecting the conclusions arrived at; these we look forward to with eagerness.

What have been the results of these long continued observations? What place does homœopathy at present occupy, what are its relations to humanity, to science, to the state? For its position with regard to these three we must always keep in view. Have the former views of the author altered in any degree, and how?—I shall here briefly state the results of my enquiries, and once more express my views clearly and unreservedly.

I.

Homœopathy must be utterly rejected *as the universal principle of the whole art of medicine*. As such, in its first crude form it would be the grave of science and of humanity too.

Of science. If a young man were to read the earlier writings upon Homœopathy, which contemptuously reject all previous knowledge, and the accumulated treasures of experience, and look upon only to the symptoms of diseases, without the least reference to their causes, to the external and internal conditions of healthy and morbid life, to anatomy, physiology and pathogenesis—could he feel the necessity and the inclination to undertake a thorough, laborious and comprehensive study of medicine? Would he not be only too glad to be able to reject all this as belonging to the effete and obsolete *allopathy*? And would he not, must he not in this way become a mere crude empiric?—Most assuredly. And most assuredly also would the whole science of medicine, were it generally cultivated in this manner, degenerate into sheer crude empiricism.

Wherefore the old system of medicine continues to be the *rational*, in contradistinction to homœopathy, and I would therefore beg that in future, in place of employing the much too narrow, nay false designation of *allopathy*, the term *rational medicine* may always be used, in order to express the contrast of the old scientific medicine to the homœopathic; for the essential difference betwixt them consists in this that the former is *founded on reason and logical deduction* (ratio, ratiocinium), in respect to both its diagnosis and practice, whereas homœopathy is founded on a mere *search for and stringing together of the morbid symptoms*, and in this alone

does it consist.—Rational medicine requires us to *think*, homœopathic only to *compare*.

And in like manner in its first crude shape it would be the *grave of patients*; for such in all ages has been, and must ever be, the effect of pure empiricism.

• II.

But homœopathy is worthy of consideration and is not to be rejected, but to be made use of as a *peculiar method of treatment, subsidiary to the higher principles of rational medicine*.

This I am as firmly convinced of as I am of my first proposition, and I feel it due, to the truth I honour to say so. Without entering on a consideration of how much the diet or the infinitesimal doses of the medicines may have to do with the cure—it cannot be denied, and I am perfectly convinced not only by the observations of others, but by my own experience, that homœopathy has frequently been successful, sometimes most strikingly so, and that after the fruitless employment of other powerful methods of treatment.

It is *the cure of the disease itself*, effected by means of the simple principle, *similia similibus*, the similar disease by the similar remedy, and it cannot be denied that it testifies to a deep insight into organic nature, which Hahnemann has attained, and which he has pursued and developed to its fullest extent. Highly meritorious are the labours of the homœopaths in ascertaining more completely and establishing more carefully the effects of medicines, in distinguishing the proximate from the remote and the secondary action. We are already indebted to them for many valuable discoveries on these points, and we shall rejoice to obtain still more.

But here I should make three remarks :

In the first place, *the thing is not new*.—In all ages there have been cases enough, where medical men have made the *disease itself*, i. e., the internal alternation of the vitality that is the proximate cause of the morbid symptoms, the object of their treatment, and professors have not been wanting who taught this practice. The author himself can refer to the thousands who have been educated by himself during the last forty years, and also to his writings. I called it the *direct or specific mode of treatment*.* We only differ from the homœopaths in this, that we did not make this direct or specific treatment the *first and only* method, as they do, but we first sought for the causes, internal and external, of the disease, and endeavoured to cure it by their removal, in which we were often successful; but we only employed the direct method either when no cause could be discovered, or when, after removal of the cause, the disease still persisted and had become self-sustained, or finally, when the whole

* I would beg the reader to peruse what I wrote so long ago as 1799, in my *General Therapeutics*. See C. W. Hufeland, *System der praktischen Heilkunde*. I Band. It was also published separately.

disease had a specific character, as for example, a miasmatic dyscrasia, or a periodicity of recurrence. The treatment of syphilis, scabies, and ague, the employment of Mercury, Sulphur and Bark in these diseases, what else is that than the treatment of diseases themselves, founded solely on the presence and the recognition of their symptoms?

To this class belong the *pure* nervous diseases, those namely in which the cause of the malady is in the nervous system only, and consists in some abnormal state of the nerves. And in what actually does the direct treatment of these diseases consist?—All rational physicians thought, and all rational teachers taught that the various remedies which we call neurotic medicines, such as the ethers, the balsams, the narcotics, the metals, even counter-irritations, electricity, mesmerism, and magnetism, effect an alteration in the interior of the nervous system, capable of removing that internal morbid alteration whereon depend the morbid symptoms. Homœopathy says “capable of covering the symptoms.”—Is there here more than a mere verbal difference?—Is not the idea the same?—Neither expression can be said to be an *explanation* of the action that takes place.

The difference between homœopathy and rational medicine consists therefore merely in this, that the former makes the direct treatment the *first and only* mode of treatment, while it neglects the exciting causes, and precisely in this is it faulty.

Second, *the determination of the diagnosis*.—Neither is this new. The oldest and most natural way for recognising the disease, was to observe its essential phenomena (symptoms), and on them we founded our diagnosis. The author himself in his lectures always used to construct the idea of the proximate cause, or of the actual disease, upon the essential symptoms, i. e. those symptoms inseparably connected with its existence.

But the difference is that rational medicine has and make use of other diagnostic means besides the symptoms, these are the *genesis* and *reaction*, whereby the diagnosis is rendered much more comprehensive, more profound and more certain.*

There is further a very important difference betwixt us in this, that homœopathy makes the totality of the symptoms of each individual patient the basis of its diagnosis and of its treatment, whereas rational medicine searches for the *essential* and *constant* symptoms, compares them with other cases, thence constructs classes and orders of diseases, and thus obtains rules for a common treatment of all cases of the same disease.*

In homœopathy therefore, as many patients, so many diseases and so many different modes of treatment—this is sheer empiricism. In rational medicine, one general mode of treatment, founded on the constant essential character of the disease.

• Third.—Nor is the *principle for the discovery and employment of the medicine* new.—From the remotest times physicians have employed for

* See Hufeland, *Lehre von den Heilungsobjecten oder die Jatrognomik*, Berlin, 1829.

the direct cure medicines whose action was similar to the disease. This I can certify that long before the appearance of homœopathy, I employed Belladonna in amaurosis solely because it causes blindness in the healthy subject, and in whooping cough because it has a peculiar action on the pharyngeal nerves, and in the healthy individual causes spasm of the throat, also in mental diseases because it produces madness in the healthy subject. And the same with respect to many other remedies.

But we differ in this, that rational medicine has in addition to this many other curative methods for combating immediately the *actual disease*, and these it uses to the great advantage of humanity, but of these homœopathy knows nothing. Among these are, first, the *contrarius contrariis*, the employment of remedies whose action is the opposite of the disease. No one will deny that heat can be removed by cold, excess of blood by abstraction of blood, too violent circulation by Nitre and Digitalis.—Further, the employment of the *derivative antagonistic methods*, the mighty agency of counter-irritation, whose place can frequently not be supplied by any thing else. Who is there who has not witnessed the excellent effect of purgatives (irritation of the bowels) in removing cerebral affections? Have they not in countless instances been the most efficient, the sole remedial means, after the fruitless employment of medicines acting directly on the affected organ? Only a short time since I saw a woman affected with chronic mania who had long been treated homœopathically without relief, recover after the employment of solvent and purgative medicines.—In like manner the cutaneous irritants, the artificial ulcers, by means of which the most obstinate chronic affections are so often removed!—All these are remedies of which homœopathy knows nothing, which it even forbids, and thus deprives the medical practitioner and humanity of some of the most important remedial agents. But shall we allow ourselves to be robbed of such important classes of remedies from mere prepossession in favour of a one-sided system, or from blind obedience to a single authority, in direct variance with the immense experience of thousands of years? No, never!

Finally, what a rich remedial treasury does not rational medicine possess in the *general alteration* of the *dynamic state* by stimulating or depressing the vital force, by increasing or abstracting the nutritive elements, those also which go to feed the disease. Who is ignorant of the power of restorative tonics, or of the starvation cure in removing diseases, even such as consist of disorganizations that have resisted all medicinal appliances?

III.

The difference betwixt homœopathy and the old system will be most obvious, if we consider the two in reference to the three chief categories of medical treatment as laid down in our text books, viz.: the *indicating*, the *indication*, and the *indicated*.

The *indicating* (that which reveals the disease, its essential nature, and consequently the object of treatment) is, in old medicine, the external phenomena of the disease (its symptoms), their causes, proximate and

remote, and the reaction of the organism to the precedent action of the accidental and designed influences upon the patient (*phenomenon, genesis, reagens*). In homœopathy the symptom is the sole clue,—the symptom constitutes its whole diagnostic means.

The *indication* is, in ordinary medicine, the conclusion drawn with respect to the appropriate treatment from the symptoms, together with the causes of the disease and the reaction, assisted by reason and experience.—In homœopathy, however, it is simply taking cognisance of the symptoms of the external picture of the disease, and searching for a similar picture in the *Materia Medica* among the recorded effects of medicines, consequently a mere comparison and stringing together of the external and sensible, in order to find the appropriate remedy.

Finally, the *indicated* (the remedy, or mode of treatment pointed to by the indication), in the ordinary system, is everything capable of removing the cause of the disease or its effect, that is, the manifestation of the disease itself, be it a contrary acting, or a similar acting, or any other method of treatment warranted by experience. In selecting the means indicated, the ordinary system is guided not merely by present experience, but it has the treasures of ancient and traditional experience among its resources, and these it draws on largely with advantage.—Homœopathy, however, only employs *similarly acting remedies*.

Now I put it to every unprejudiced person, which system most deserves the name of *rational, consonant with experience*? Which allows the mind most freedom; which gives it most materials for thought and enquiry; which offers the greatest field whence to select the means of relief and rescue? The ordinary system or homœopathy?—I think no one can be at a loss to reply.

IV.

In truth, homœopathy plays extraordinary pranks with the word *allopathy*! If, on the one hand, it understands by that term merely one method of the ordinary mode of treatment (*contraria contrariis*) which it rejects, on the other hand it also includes under that appellation the whole ordinary system of medicine with all its principles, and this it also rejects, whilst at the same time it adopts and employs its most valuable principle.—How is it possible to comprehend all traditional *experimental, rational* medicine under the name *allopathy*, which is but one method of it, whilst *homœopathy* is another.

V.

But homœopathy will ever remain a *symptomatic mode of treatment*, seeing that it finds both the diagnosis and treatment of disease on the symptoms alone; and it will meet the fate of every symptomatic remedial method. It can remove the symptoms, but the disease remains.—Symptoms are merely the products, the manifestations of the disease, not the disease itself, on which they depend. Just let us consider pain, one of the

most general symptoms of an organic disease. Can it be considered identical with the vast varieties of diseases which produce it? But we may remove or allay the symptoms, as for instance in the case of pain, and still the disease remains. Either it soon returns with the same symptoms, or it assumes another—often a much more dangerous form. This is what must always be the reproach of the symptomatic treatment.—And this reproach, as far as my experience goes, is applicable to the homœopathic treatment. The relief it affords is often only temporary, not permanent.

In order to show this clearly, I need only refer to the metastatic inflammations, the erysipelatous, the arthritic, &c. Here homœopathy endeavours to remove the collective symptoms of the inflammation. The empirical practitioner does the same by means of applications of cold water, camphor, lead, &c.—But what are the consequences? Either the inflammation transfers itself to another, often a more important part, or it remains in the part first attacked, as a chronic remnant of the disease which has not been radically cured.

This was just the way with respect to the system of Brown. The practitioners of his system also omitted to bleed in inflammation of the lungs, the brain, &c., and boasted that they saved the patient's blood. In place of bleeding they gave Opium, Senega, and other stimulants, and they certainly sometimes succeeded by means of the artificial over-irritation thereby produced, in subduing the local affection. But what was the consequence?—Either an immediate fatal result, or a subsequent chronic disease, frequent recurrence of the previous inflammation, and, in cases of pneumonia, pulmonary consumption.

In every inflammation we ought to distinguish the local affection (local inflammation) from the general inflammatory diathesis in the whole sanguineous system, and in the blood life itself. This diathesis is the essential basis and the vital source of the disease of which the inflammation is merely the manifestation or local concentration. Now we may sometimes succeed in subduing the local irritation by means of remedies that act in a general way or locally on the affected part (also homœopathic remedies), but thereby the general diathesis, the general blood inflammation is not removed—the vital focus of the inflammation is not destroyed; this blood-letting alone can effect.

VI.

The *certainty* of homœopathy in discovering the appropriate remedy has been much vaunted, and has been declared to be one of its chief advantages over the ordinary system.—But I do not find this to be the case, in fact, I have often had occasion to find the contrary to be the case. The homœopathist, as well as we, must, in the employment of the empirical and specific method, search long and try repeatedly ere he finds the right remedy. How often do we not read in their recorded observations that they gave first one, then another, and then a third medicine without effect, and that at last a fourth remedy was successful?—And this is quite what was to be

expected. Amid the immense number and variety of the different symptoms of many medicines and of many diseases, it must be excessively difficult, first to distinguish the essential from the accidental, and then to find that which corresponds to all. I need only refer to hypochondriasis and hysteria.

VII.

Let people talk as they may, the only radical treatment of disease must and ever will be (as in fact the simple meaning of the word indicates), that which attacks the malady in its roots and thus *removes its foundation*; that is to say, which first ascertains the internal and external circumstances whereby the disease is produced, or maintained and nourished, and removes these; which enquires into the relations of the different co-existing morbid states, which naturally maintain one another, and takes away these; which always first removes the exciting cause before proceeding to destroy the irritation; and which, only after all this is removed, and still the disease continues self-dependent, or when no remote causes can be discovered, makes the disease itself the object of treatment.

How often the physician treats dropsy, hypochondriasis, hysteria, asthma, &c., by the most powerful remedies directed immediately against the disease but all in vain! At length he discovers that some concealed scabies, or syphilis, or gout, or an obstruction of the bowels, lies at the root of the malady. He now uses Sulphur, Mercury, Guaiac, or alteratives, and effects a cure.—The whole division of nervous diseases, into *morbum* and *sine materia*, so important in practice, rests on this discovery.

We observe, with pleasure, that homœopathy is gradually coming back to this, and that its founder himself, in his latest work, *On Chronic Diseases*, bases the treatment no longer merely on the symptoms present, but on the remote causes on which they depend. We only regret that he limits himself to two dyscrasias only, the *syphilitic* and the *psoric*, for the number of remote causes is much greater, and in these two are not included the *arthritic*, *scrophulous*, *scorbutic*, and the very frequent *mercurial* (*hydrargyrosis*) *dyscrasias*, which are of equal importance, and give rise to a great many diseases. On this subject I must refer to my work alluded to above: *Die Lehre von den Heilungsobjecten*.

To speak accurately then, the difference between the two systems is this—that homœopathy prefers the *direct* to the *indirect* mode of treatment, and employs the latter only as an adjuvant; whereas rational medicine first endeavours to ascertain whether the *indirect* treatment, that is, the treatment that acts on the producing causes of disease, is applicable, and only when this is not the case, does it resort to the *direct* mode of treatment.

We ought here to observe, that the idea of *psora* being the cause of chronic diseases, is by no means a new discovery of homœopathy as it boasts it to be, but it has long been considered such in old medicine; in-

deed, some medical men have almost carried the idea too far. The same is true of *syphilis*, which we cannot separate from *sycosis*.

VIII.

Homœopathy can certainly boast of one advantage, namely, *that it never does positive harm*, that it can never act too strongly or injuriously on the organism. It can be accused only of sins of *omission*, not of sins of *commission*. And this is no mean praise, especially at the present time, when medical men are too much addicted to giving powerful and heroic remedies, and are too rash in the use of narcotic and metallic poisons, without reflecting what injury they thereby inflict, not only on the disease, but on the organism, the reproduction, the vitality itself; injury often much greater than the disease they seek to cure. The author has long perceived this, and has frequently called attention to it in his writings, and warned his colleagues against it;* he repeats here the warning:—"What we can effect with little, let us not do with much;" and, "let the remedy never have a more severe action on the organism than the disease."—These are two maxims which he always has before his mind in practice, and which he earnestly commends to all his colleagues.—It is obvious that there would be no difficulty in coming to an understanding with one another, and forming a union.

• IX.

But the chief fault of homœopathy is its complete exclusion and neglect of the *autonomy* and *autocracy of nature*, of that interior sanctuary of life which lies at the root of all curative operations, which supports them, directs, modifies them—nay, often is their sole efficient agent, and without which no medication can be conceived. This curative power of nature, this self-aiding faculty which is often so remarkably displayed, all that great work which we understand by the word *crisis*, internal healing process, and for which every medical man must entertain the most profound respect, is quite lost to homœopathy, and this we consider an incomprehensible and fatal want. The medical practitioner must always remain only the *minister*, he can never be the *magister naturæ*. He must be her friend and ally if he would produce a beneficial effect, he must attend to her tendencies and requirements if he would not often act in direct opposition to her, to the great injury of the patient.—Are not even some so-called diseases often the most wholesome critical efforts of nature to effect a radical cure?—We would only remind the reader of intermittent fever.

X.

Homœopathy exercises just that sort of *hurtful and confining influence over the minds of its partisans* which every one-sided system must do, and

* See among others an article entitled: *On the Rights of Medical Men over Life and Death*, in the *Journal der Præct. Heilk.*, Jan. 1823. It has also appeared as a separate publication.

which we had reason to complain of during the prevalence of Brown's system. It produces blindness, narrow-mindedness, and prejudice, even among the better sort of physicians, who give themselves entirely up to it. They overlook the most important circumstances, the most urgent demands of nature for help, the plainest indications, because they do not fit into the morbid picture they have drawn for themselves.—My experience, up to this time, has fully convinced me of this. I have seen with astonishment and regret, even the best among the homœopaths quite blind to the plain requirements of the case, and deaf to the promptings of their own better sense, anxiously sticking to the prescribed mode of thinking, and the dictatorial authority of the master, and acting strictly in accordance with it.

It is well known, that one of the principal rules of homœopathy is, not to disturb the secondary action of medicine. Now, according to the founder, this lasts often eight, fourteen, even forty and fifty days, and I have often observed, that during all this long time, in spite of the most important symptoms and changes, the practitioner dared not do anything, out of respect for this very problematical rule.—*There is nothing so much to be guarded against as mental prepossessions.*

XI.

But this one-sidedness of views, this narrow-mindedness, may be productive of the most deplorable, indeed, the most fearful results, when we have to do with dangerous cases, with diseases of rapid course and threatening a fatal issue, and generally when the object is to *save life*.—How I wish my feeble voice could be heard like thunder! What, in the case of chronic, not dangerous cases, may be a permitted, temporising indifferent, easily-remedied treatment, in such cases becomes a *crime*. He who, out of fanatical regard for his mode of treatment, when life is at stake, neglects to use the remedies which a thousand years' experience has proved to be the best; he who, for example, omits blood-letting when the patient is in danger of being choked by his own blood, in cases of pneumonia, apoplexy, encephalitis, and generally in inflammations of important organs, and death or some chronic incurable disease ensues—such a one has a heavy sin of blood upon his conscience, which, if he do not immediately feel it, will some day weigh fearfully upon him, when the intoxication of fanaticism shall have passed away—such a one is doomed by justice to punishment, if not before an earthly, yet certainly before a higher tribunal; for he is a murderer by omission of duty, just as much as he who sees his neighbour in danger of drowning and refuses to pull him out of the water.

And among such cases must be reckoned those where a disease, not in itself dangerous, by the refusal and omission of such approved and necessary remedies, gradually changes into a dangerous and life-implicating malady; as, for example, chronic catarrh and chest affections into pulmonary consumption.

XII.

The conclusions from all I have adduced are these : *No homœopathy, but yet a homœopathic method in rational physic !*

No homœopaths, but yet rational physicians who make use of the homœopathic method in the right place and in the right way.

XIII.

With respect to the relation of homœopathy to the state and government, the following conclusions follow from what I have said above.

Science is free, and no government has any right to intermeddle in the domain of knowledge and of the mind. Homœopathy as a science, and even as a doctrine, should in no way be repressed ; the true or the false in it must be left solely to scientific discussion, to experience, and to time, which have already correctly and justly decided respecting so many similar phenomena, and they will not fail to decide respecting this also.

But the case is different when we look at the *practical side of the question*, and its influence on the *welfare of humanity*. Here the state may, here it must interfere, to prevent the harm which ignorance and error might produce.

Prussia has set the example in this matter in the following law : *that those only shall be permitted to practise homœopathy, who have already obtained their diplomas as physicians, consequently have given adequate proof, by examination, of their education in the medical sciences.*

I would like to see another condition enforced, namely, that no one should be allowed to practise homœopathy until he has been engaged for five years in medical practice, and gained the requisite experience at the bedside, so as to have observed and made himself thoroughly acquainted with the course and operations of nature, whereby alone he can judge of the relation of the medical art to nature, and be guarded against the misconceptions and oversights which otherwise are inevitable in homœopathy.

May what I have said above be received as it has been written, with calmness, benevolence, and pure love of truth, without party spirit and hatred, and may it contribute to bring about mutual understanding and union !

Not opposed to one another as enemies, but extending to one another the hand of friendship, united by one noble idea, one common object, and by the same general principles of a rational and experience-founded pathology and therapeutics, let us ever go forwards to the attainment of our great common goal : *the physical welfare of the human race !*

I observe with pleasure the advent of that time, and the gradual amalgamation of the two parties—those of them, at least, whose object is not mere sectarianism and selfishness, but the elucidation of truth.

Homœopathy now begins to attend as much to diagnosis as the old school, and to take into consideration the previous history (*genetic*) of the

disease ; it now, like the ordinary system, looks for indications, not only to the symptoms actually present, but also to the causes ; it now admits that, in urgent cases, even allopathic remedies, such as venesection, counter-irritants, and purgatives, may and must be used ; it now begins to talk of metastasis and transference of disease.—Does not this sufficiently prove that it acknowledges all that is good and true in the old system, and commences to make use thereof,¹ and that it only discards what is problematical and hypothetical, which we also do not regard as the principal thing ?—Thus do nature and experience, our two great instructors, compel all, who are not devoid of sense, to return gradually to the right way, and they will also gradually lead the opponents of homœopathy to adopt what it contains of true and useful.

The peculiar and most important problem for homœopathy is, *to search for and to find new specific medicines.* May it succeed in discovering these for many diseases, and it will merit our cordial thanks !—*British Journal of Homœopathy*, April 1858.

MORAL INSANITY.

By DR. MENDEL.

DR. MENDEL, in a lecture delivered before the Hufeland Society of Berlin, credits Pinel as the first alienist who described a *mania sine delirio*, and that in such cases the will power is out of order. Grohmann (*Nass's Zeitschrift für Psychische Aerzte*, 1818) recognizes a moral disorganization, and divides it into moral imbecility, brutality of the will, and moral idiocy. Prichard gives us the first symptomatology of the disease, which he named "moral insanity." He defines it as a morbid change of the natural feelings, affections, habits, of all moral tendencies and inclinations, without any clear change or defect in thinking and judging, and especially without any illusions or hallucinations. Maudsley in England and Morel in France became strong converts to this doctrine. Zeller in Germany acknowledges the disease, with the proviso that in every case a certain weakness of intelligence, mild imbecility must be shown. Krafft-Ebing considers moral insanity a mental degeneration.

Symptomatology.—Moral insanity is a morbid alteration of the natural, æsthetic, and moral feelings, producing secondarily a morbid change in our inclinations and passions. Hallucinations and illusions are always absent. Intelligence is somewhat weakened but may not be a prominent symptom. Frequent facts prove that in diseases of the brain our natural feelings, inclinations, and affections may become changed, and this change may remain for a long time, the only characteristic symptom. We remind you only of those frequent cases of epilepsy in children, where during the intervals between the epileptic paroxysms the intelligence was at first apparently not disturbed, but gradually a change comes over them, so that they become really ill-mannered. They are given to lying, playing tricks,

become malicious and destructive. Moral insanity has developed itself on this foundation of epilepsy, leading eventually to epileptic imbecility and dementia. *Pro re nata* you meet in older persons an inclination to tramp; these vagabonds beg, steal, and in their destructive maliciousness no crime is too horrid for them. Similar symptoms may be observed from any neurosis having its seat in the central nervous system. Such a transitory destructive tendency is very frequently observed in chorea, and many a hysterical mental disturbance begins in this manner. More frequently still we find such states in chronic cerebral intoxications, especially in chronic alcohol intoxication; the patient attends to his business, the intelligence is not yet visibly weakened, there are neither delusions nor hallucinations, but a desire to street brawls, fights, to a disregard of all decency in public as well as in private, characterizes even at that stage the beginning of a deep-seated mental disease. Severe organic cerebral diseases show often in their prodromal stage the symptoms of moral insanity, or they may appear during a remission, and such an explosion has even been witnessed before health was restored. The deliria of dementia paralytica always show such a state at a time when hardly any other symptom of the disease made itself manifest.

Patients after an apoplexia cerebri sanguinea often display similar changes in their character, which sometimes outlast the hemiplegia. Equally well known and described are such states at the beginning of senile involution of the brain, and sexual excesses are not rare in old people from the same cause. In periodical mania as well as in the *folie circulaire* such morbid affections are frequently observed during the stage of excitement.

Moral insanity may also be congenital or acquired. Congenital moral insanity appears exclusively in persons with an hereditary tendency to alienation and severe neurosis. We meet here with the abnormal mental faculties a whole series of malformations and other bodily ailments. Frequent attacks of headaches, of vertigo, general convulsions or spasms limited only to certain groups of muscles, with or without consciousness, diminished sensibility. The cranium may be found deformed, one side larger than the other, defective development of the occipital bone, retraction of the frontal bone, protrusion of the mandibula, irregularities in the arrangement of the teeth, adhesion of the lobes of the ear, harelips, club-foot, etc., etc. With their evil inclinations they never progress much in school, and in spite of their good memory their positive gain is little or nothing. They play the truant in school, and when of age loafing is their pleasure. Oh, how often do we find such cases in the workhouse, in the penitentiary and prison! Even there they remain stubborn, unyielding to all discipline, and insensible to all lawful punishment. Are they subjects for the prison, or ought they to be kindly cared for in an asylum? A weighty question and still undecided. This congenital form may develop itself fully at the time of puberty in connection with *paranesis*. Sexual excess is frequently very early developed in such patients. Thus Mark mentions a child of four years given to this vice, and suffering from moral insanity.

The *acquired form* may appear at any age and from the most diverse causes. Injuries of the head, weakening influences, too many parturitions quickly following one another, exhausting acute diseases, excesses in Baccho and Venere, frequently cause mental diseases, even where there is no hereditary disposition. Wigand reports an interesting case: A boy is struck on the head with a ruler, in consequence of which a total change in his moral feelings sets in. Trepanation is performed at the seat of the injury, a splinter removed, and the boy restored to health.

In all such cases there is a certain weakness of intellect, more in the congenital than in the acquired form, and education meets difficulties everywhere. They do not understand the moral wrongs which they inflict on themselves as well as on others.

What position does moral insanity hold in the nosological system of psychiatrics? Some call it affective insanity (Maudsley, Zeller); Krafft-Ebing, mental degeneration. If we accept two qualities of the mind, feeling and thinking, our disease belongs to the affections of the feelings. Taking an analogy from the pathology of the peripheric nerves we would distinguish between hyperæsthesia, paræsthesia, and anæsthesia. The first gives us essentially the picture of melancholia, the latter the idiotismus of the feeling, whereas the paræsthesia of the feeling represents the origin of moral insanity.

The *course* of the disease is always exceedingly chronic, and may remain unchanged through a whole life. In other cases the disease appears with a certain periodicity. Even perfect intermissions may prevail between the paroxysms; in other cases we only meet clear remissions. The issue is usually unfavorable; in many cases perfect dementia develops itself, in others the patients perish of diseases caused by their excesses, and only in exceptional cases we find a cure or at least an intermission for a number of years recorded.

Prognosis in congenital cases is decidedly unfavorable, very doubtful in acquired moral insanity, although Prichard and others report some cures.

The *diagnosis* of the disease deals with the difference between wickedness and disease, and many authors deny any such difference. Bonfigli de Ferrara hopes that in future times insane people and criminals will be put on the same footing, and that lunatic asylums will take the place of prisons. It is too true that it may be difficult in some cases, nay, nearly impossible to decide whether it is disease or crime, but in most cases the anamnesis of an hereditary disposition, of the personal development, the presence of anomalies in the formation of the cranium, and of the corporeal structures in the congenital form, the proof of a poxa which caused the mental alteration, the paroxysms of headache and vertigo in the acquired form, the epileptic spasms, the mental hebetude, and especially the loss of all judgment in their transgressions and crimes, may lead us in the diagnosis of a diseased state in relation to the mental functions of the brain. It would be very wrong to draw out a solitary symptom as of most importance, or to consider the crime as the starting-point to prove a diseased state; only the totality of the case decides.

We have not yet a pathological anatomy of this disease ; in many cases nothing characteristic was discovered, or at least nothing differing from other mental diseases. Atrophies of the frontal convolutions, or of other parts of the brain, with more or less extensive inflammations of the membranes, were observed during the last stages.

We deal with sick people. Severe punishments, the whole apparatus of moral treatment will hardly effect any change in the gray substance, or only further its transition into atrophy. Something might be done by firmness combined with gentleness, by discipline, and by mental and bodily labor suited to every particular case. Where supervision at home is impossible, our asylums must bear the burden.—Z. f. P. M., 52, 1876.

Thus we see that from a medical standpoint our case runs smoothly. Moral insanity is a cerebral disease, which may be cured in its first stages, but remains incurable as soon as pathological changes deprive the organ of its ability to perform its functions. But as soon as we come before a court the scene changes, and confusion worse confounded stares at us every where. In reading the reports of the Medico-Legal Society (*Journal of Nervous and mental Diseases*, iv, 123), we find that the physicians take the right ground that there is really no such disease as partial insanity, but lawyers consider it a most dangerous revolution to accept such ruling as a guide ; they find it of the utmost importance to distinguish between general and partial insanity, and fail to differentiate strictly between eccentricity and insanity. In fact in looking over the subject we perceive that the civil law is at variance with the criminal law, and that a man may be civilly incompetent, but sufficiently sane to be made criminally responsible. It may be true that in moral or partial insanity the intellectual faculties are sound and only the moral feelings perverted, and we must therefore go one step further and endeavor to study out what is insanity, under what name whatever it may appear, and can a man be sane and insane at the same time ? Delusions alone are certainly not proof enough to consider a man insane, for many a religious or political fanatic may be the subject of strong delusions ; in fact all religious faith, to the believer his all in all, is based on such delusions, and although we may scoff at the coffin of Mahomet, or look with pity at the idolatry of the Brahmin, at Mongolian deities, or at the simple religious rites of our own aborigines, certain it is that such delusions have become part of the believer's nature, and must be excluded in the study of insanity, or else we might well ask, who is sane ? But we need not go so far ; look at our own spiritualistic tendencies, and is there one among you who would dare to consign a man to the lunatic asylum, because he sees and coherently converses with persons long since dead, or, if a physician, because he prescribes from second sight, and acknowledges that a good man of the spirit world aids him in relieving human sufferings ? Nor are mere whims, mere eccentricities, as so often witnessed in men of genius, to be considered as symptoms of insanity, although in some persons they may show that in that one direction the balance-wheel is out of order.

Different nations make different definitions of insanity, and even in the same nation courts and judges differ widely. Voisin, in his *Leçons Cliniques*, justly lays great stress on his definition of insanity, when he says, *L'aliénation ne commence que lorsque l'individu a perdu conscience de son état morbide et considéré ces hallucinations, ces impulsions isolées, ces conceptions délirantes comme des réalités et leur obéit*. Here we have two strong points; 1, the patient considers his delusions or hallucinations a reality; and 2, he has lost all will-power over himself, and he cannot resist any more his morbid impulsion. How far better is such a definition than the rule which was in force in the English courts, and, as far as I know, also in this enlightened country, that a man may be held responsible for his crime if he possesses a consciousness of right and wrong, and a knowledge of the consequences of the act, thus forgetting entirely that a lunatic has lost the power to choose the right. It must be then the duty of the experts to prove insanity where present *from other symptoms*, or to show the hollowness of the pretence with which the plea of insanity is too often set up by the defendant's lawyers, for it is just this doctrine of "irresistible impulse" on which is usually based the defence of insanity.

Krafft-Ebing, in his *Criminal Psychology*, lays down three rules in order to find out whether insanity is present or not: 1. What is mental insanity? 2. How can we prove that the disturbance of the mental functions originates in a diseased state? 3. How far has this diseased state suspended or annihilated the control over our actions (*impuissance de la volonté qui prive l'homme de sa liberté morale*)?

1. *What is mental disease?* Mental disease is brain disease, affecting especially the gray cortical layer of the cerebral hemispheres, with prevailing perturbation of the mental functions in relation to the intellectual sphere, to the moral feelings, and to the actions emanating therefrom. *The great characteristics of psychical disease is the subjective change of the psychical individuality.* For forensic purposes there is no need to differentiate between one mental disease or another.

2. *How can we prove that the mental state is a disease?* a. The pedigree of the inculpaté according to the somatic and psychical conditions and relations of his ascendants. We inherit not only certain peculiarities of character, talents, and inclinations, but also infirmities, vices, and deformities. Such an hereditary psychopathic bias may many a time exhibit itself only as a latent predisposition, but even then its material basis can be shown by its relation to mental and alcoholic irritations. Without being yet insane, experience teaches us that such persons become easily affected, and these impressions always cause a congestive state; they are also liable to *transitory maniacal explosions with loss of consciousness* during their duration (psychical epilepsy must be differentiated from epileptic mania). The smallest quantity of alcoholic beverages intoxicates them, and this intoxication appears under the form of a *maniacal fit with delirium and unconsciousness*. In other cases the hereditary influence displays itself clearly from infancy, giving us even at that early age the picture, not of

moral insanity, but only of moral depravity. At any rate hereditariness ought to lead judge and jury to a mitigating verdict, especially where the inculcate also presents bodily infirmities, as abnormities in the formation of the cranium, deformities of the ears, inhibitory formations of the genital organs and extremities, squinting, stammering, deaf-mutism, etc.

b. Has the inculcate ever passed through any disease which might cause insanity, as *e. g.*, cerebral inflammations at an early age, traumatic causes and concussions of the brain, excesses in drinking, neuroses, especially epilepsy, deep mental emotions, etc., and have the psychopathic symptoms present in the case any clinical relation to the etiological cause? Here we must also lead your attention to certain periods of life which have a certain predisposition to mental diseases, as puberty in both sexes, menstruation, pregnancy puerperium, lactation, and climaxis in the woman, senility again in both sexes.

c. Mental disease is a cerebral disease, as proved by the sensory, motory, and vasomotory disturbances. Headache, sleeplessness, anaesthesia, neuralgic hallucinations, and illusions may precede for a long time the state of real insanity. As motory perturbations we may witness inequality of the mimic innervation of both sides of the face, atactic and parietic disturbances in the extremities, clonic and tonic spasms either general or limited to certain groups of muscles, irregularities in speech, etc.

3. *How far has the diseased state of the brain suspended or annihilated the control over the actions of the patient or culprit?* The law justly requires proof that the psychical perturbation has annihilated the power of controlling his action, and does not allow passions, emotions, and impulses to stand as causes of suspended responsibility. Such approximate proofs are :

a. That the cerebral affection gave itself vent in spontaneous impressions, in passionate emotions, in delusions and hallucinations, which were the cause of the consequent action.

b. The psychical motives, from whatever cause they might have originated, are in opposition to all moral, æsthetic, and lawful principles, producing either melancholia or mania in consequence of the disturbed association of ideas or mental hebetude.

c. The consciousness of its own individuality as well as that of the outside world has been defaced by delusions and illusions. This perturbation may even reach such a degree that the individuality of the person is, as it were, changed into another one (Christ, Napoleon, Mary, etc.), so that the action is performed by the psychologically changed person, although before the bench he remains the same individual.

Let the physician when called upon the witness-stand firmly adhere to the rules laid down by Krafft-Ebing, and he will have less trouble in convincing the court where insanity is present and where not. *The physician has nothing to do with the crimes and its consequences; his only duty is a medical one.* Let us firmly hold on to the doctrine that "*irresistible impulse*" cannot be confounded with moral or partial insanity, and where such a plea is set up, let us frown it down. Just from such reasoning we

see opposing doctrines upheld, and many a good authority, comes to the conclusion, if irresistible impulse is only another term for moral insanity, then there is no such thing as moral insanity. As usual the truth lies between, and only by circumstantial evidence the truth or falsehood of the plea can be made out. But even give the lawyers the benefit of the doubt, and let us accept their dogma that even the irresistible, transitory impulse to commit the crime is akin to insanity, if not insanity itself, there would be no harm in it, if the insane criminal were put, as in England and Germany, in an asylum for the criminal insane, and no *habeas corpus* allowed to rescue him from the paternal treatment of a well-regulated asylum. The plea that a man was sane before the perpetration of the crime, insane during the act, and immediately sane again, will not hold good as an example of transitory mania, for in that disease unconsciousness of the act is the great characteristic; nor can we accept Brown-Sequard's proposition of the dual character of the brain. At any rate, as we cannot divide the insane hemisphere from the sane one, let the former be there as the patient and the latter as the criminal. If we only had the law that at least five year's detention in an asylum is the sequela of a successful plea of insanity, we would hear less of this much-abused plea, but at any rate let us as physicians hold fast to our rights, and we will have no trouble whatever to distinguish real from faucied insanity.—*The North American Journal of Homœopathy*, May 1877.

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